


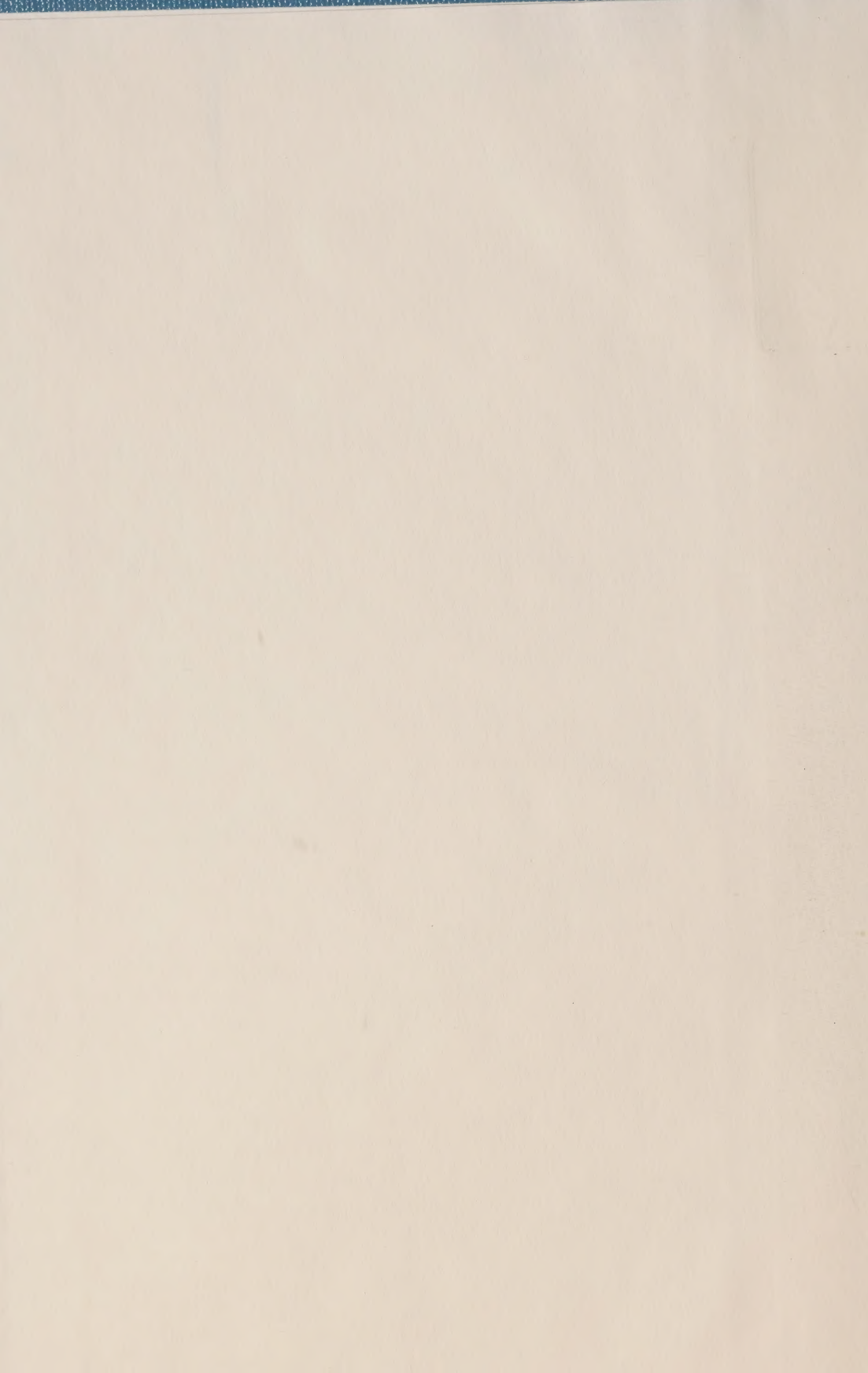
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Mineral Industry Report
1973
Northwest Territories
EGS 1976-9

W. A. Padgham
J. B. Seaton
P. J. Laporte
and J. D. Murphy

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Canada.

Government
Publications

Dept. of Indian Affairs & Northern Development

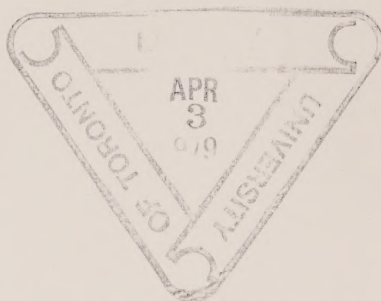
MINERAL INDUSTRY REPORT

1973

NORTHWEST TERRITORIES

by

W.A. Padgham, J.B. Seaton, P.J. Laporte
and J.D. Murphy



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CONTENTS

	<u>Page</u>
INTRODUCTION	1
COMPILATION AND PRESENTATION	2
FUNCTIONS OF RESIDENT GEOLOGIST'S OFFICE	2
MINING STATISTICS	4
SUMMARY OF EXPLORATION ACTIVITY	4
KEEWATIN DISTRICT AND MELVILLE PENINSULA	10
SOUTHERN DISTRICT OF KEEWATIN	10
Maguse Lake-Wallace River Project	10
Carr Lake Project	12
Morso Island Claims	13
Whale Cove Claims	13
IT Claims	15
DEB, EVE	17
DEE	18
B-Zone Gold Deposit	20
MAG	21
Yandle-Kaminak Project	22
K Group	25
CENTRAL DISTRICT OF KEEWATIN	25
TMT Project	26
CAT	28
ACE	28
NORTHERN DISTRICT OF KEEWATIN	29
JA, PRN	29
MAG, OAT, OS, ROSS, N	30
OTOK	31
MELVILLE PENINSULA	32
North Melville Peninsula Project	33
EXPLORATION IN THE MACKENZIE DISTRICT	34
BAFFIN ISLAND	34
Strathcona Project	34
Strathcona Project	35
BM, CC, JO, KR, TR	36
Strathcona Sound Deposit	39
ARCTIC ISLANDS	40
ROOK, BRAN, ALL, MEG	41
MUSKOX, WALRUS	42
Cornwallis Island Project	43
Bathurst Island and Grinnell Peninsula Project	45
VENUS, TRU	46
COR	47
Arvik Project	50
CHURCHILL PROVINCE	52
LOW	53
AO, LP, KIZAN	54
GIN	55
HOB	56
BEV	57
ED	58
EAST ARM SUBPROVINCE	59
Pekanatui Point, Murky Channel	59
G Group	59
GAP Group	60
Cu Group	62

	<u>Page</u>
INTERIOR PLAINS REGION - PINE POINT DISTRICT	63
TC Group	63
Slave Point Project	66
TAN, DE	67
SLAVE PROVINCE	68
Brislane Lake Property	68
CC Claims	70
MTL	71
Giant Yellowknife Mines Ltd.	71
Bathurst Norsemynes Project	73
P Claims	74
Hope Bay Mines Ltd.	75
BEN	78
VAL	79
BALTIC	80
JAP	81
JOON	82
RUTH	83
ECL	84
ROS, KRW	85
GLEN	86
TIN, NIB, TT, TM	86
HM	88
AP Group	89
MAG	90
MSSL	91
SYN, VEN	92
SAM	94
SAP, RAP	94
JINGO	96
Hood River Project	97
Takijuq Lake Project	97
BEAR PROVINCE	98
JN Claims	99
KEN	100
Marion River Project	101
OS, ZEB	102
HD Claims	103
MJ	104
TOM, DOT	105
ICE, A, LEAH, BEL	107
STOAT	108
LEN, CBB	109
DY-DEE	110
NAHANNI DISTRICT	111
RINO	111
Bralorne Pioneer Mines Ltd.	112
Newmont Mining Corporation	113
Prospecting Permits 303-307	114
Prospecting Permit 287	115
LOU Claims	116
FB, FRY	117
Prospecting Permits 294, 295	120
Manalta Coal Ltd.	121
Cantung Property	122
HAT Claims	124
JAY, RIO, LEO Groups	125
HUG Claims	126

	<u>Page</u>
HOWARDS PASS DISTRICT	127
NIP, TOY, LOU	128
BE	131
NOR	132
DAL	135
PESO	135
TIP	136
MAV	137
SUM Claims	138
DI, CINQ	139
BAR	140
REN	141
Canex Placer	141
HYL	143
Dasson Copper Corporation Ltd.	144
TO	145
CMC	146
PAL, GAP, OX	147
CWT Claims	148
AXE, LUCK, TIN	148
ROD	149
SON	150
NOD	151
DEA	152
LS	153
BEA, DOP	153
CAT	154
SAND, GUN	155
CAN	156
KEN	157
MACTUNG	158
GOLDLIN LAKES DISTRICT	160
PAM	160
NITE	161
HORSESHOE	162
Coal Licence No. 25	163
EMILY, ICE	164
ARN, TEE	165
LIN, RAK	166
BEAR, TWIT	167
AJ	169
DICK, LAN	169
DAL, RUS	170
DEE, FALL, QUEST	171
ART, EKWI AND SNOW, RAIN	173
KEG	174
TAP	175
CAL, REEF, SCAT, ZEE	176
TET, RAP	178
NOR, MAN, WELLS	180
JAN, RIS	181
NIC, JIM, DOR	181
ALP	182
REFERENCES	185
NATIONAL TOPOGRAPHIC SYSTEM INDEX TO DESCRIPTIONS OF PROPERTIES AND EXPLORATION PROGRAMS	193
INDEX	197

LIST OF FIGURES

Figure	Page
1 Subdivisions of the Mackenzie and Nahanni Regions and areas of major prospecting and exploration activity 1973.	3
2 Geological sketch map of the Keewatin Region showing locations of some exploration projects.	5
3 Mining Districts and areas reserved from staking in the Northwest Territories.	7
4 Geological sketch map showing Noranda Mines Ltd. claims in relation to the geology of Kaminak Lake Area.	24
5 Geological sketch map showing areas explored in the Cornwallis Fold Belt.	48-49
6 Geological sketch map showing Assessment Drilling in the Pine Point Area.	64-65
7 Sketch map and cross-sections showing relationship of mineralization to structure and lithology on the FB and FRY claims.	119
8 Geological sketch map showing property locations in the Tungsten Area.	123
9 Property location map and geological sketch map of the Howards Pass Area.	129
10 Generalized Geology and Property Location Map Godlin Lakes Region (1973).	184

LIST OF TABLES

Table	Page
I Statistics for operating mines in N.W.T., 1973	6
II Comparison of claims staked and prospecting permits issued in 1972 and 1973	6
III Diamond drill holes on Pine Point Mines Ltd. claims	64

INTRODUCTION

This report reviews mining and exploration activity in the Northwest Territories, (N.W.T.) during 1973.

As the area covered is vast individual properties could be visited only briefly by the three District Geologists and the report therefore is much dependent on voluntary submissions by individuals and companies carrying out mining or exploration in the Northwest Territories. Contributions, from companies and by the Indian and Northern Affairs District Geologists, are subject moreover to restrictions on the release of confidential information and therefore no claim is made that this report is comprehensive. Space devoted to any one property reflects the volume of data made available and cannot be used as an indication of the relative importance of the property described.

The authors acknowledge with thanks the cooperation of the various companies and individuals concerned and regret any omissions which have been made.

Each property description gives details on ownership, leases, claims or permits involved and location. As access to most claims in the Shield Region can be affected readily by helicopter, or float or ski equipped aircraft to any one of the numerous lakes near or on the claims, only more unique or unusual forms of access - such as by highway - are noted. In the Cordillera access is commonly by rotary-wing aircraft and therefore this is omitted, but specific modes of local access are noted.

PROPERTY, lists the permit, lease or claims by number or names. Tag numbers for claims have been listed except where this would occupy an undue amount of space in which case only a few representative numbers have been given.

REFERENCES given are to published material that is readily available to the exploration industry at large. Reports submitted as assessment work are not listed in this report because they are available in the computer listings of the Canadian Index of Geoscience Data. These listings may be obtained alphabetically by title, by National Topographic System reference numbers (NTS) or by the concepts under which the report has been indexed.

Reference copies are available in the Library of the Resident Geologist's office in Yellowknife.

Most of the assessment reports that have been submitted throughout the history of mineral exploration in the N.W.T. are held in the archives of the Resident Geologist's office and are available for inspection. Photocopies can be purchased if required and in some cases original copies can be borrowed.

A summary of the *HISTORY* and a brief geological *DESCRIPTION* of the property is included. In some cases, reference is made to recently published Mineral Industry Reports for further historical details and where numerous properties in a district have similar geology, this is described mainly in a summary for the district as a whole.

The main purpose of the report is to summarize mineral exploration (*CURRENT WORK*) in the Northwest Territories during 1973. This is presented on a property-by-property basis in increasing order of National Topographic System (NTS) index numbers within the various district subdivisions.

COMPILATION AND PRESENTATION

During 1973, the Resident Geologist's office of the Department of Indian Affairs and Northern Development at Yellowknife maintained a permanent staff of three District Geologists and one Project Geologist.

For the purpose of property examinations and reports, the Northwest Territories were divided into three districts, determined mainly by access routes, and extent of activity, J.D. Murphy worked in the Cordillera, J.B. Seaton in the remainder of the Mackenzie District and in the Arctic Islands and P.J. Laporte in the Keewatin District.

To facilitate the presentation of the descriptive material, the Northwest Territories have been divided into eleven regions. These subdivisions as shown in Figures 1 and 2 are:

the Cordillera, which includes the Nahanni Mining District and most of the Mackenzie District west of approximately 121°W longitude; the Interior Plains, mainly the Pine Point District; the Bear Province; the Slave Province; the East Arm Subprovince; the Churchill Province, the southeastern corner of the Mackenzie District; the Arctic Islands and Baffin Island; the Southern, Central and Northern parts of Keewatin District; and the Melville Peninsula.

Properties within the subdivisions are listed in order of National Topographic System reference, (NTS).

Districts in which work was done on a large number of properties have a location map and a general description of common features to avoid needless and boring repetition.

A departure from the procedure employed in previous years was made in 1973 by requesting companies to submit their own summaries of exploration activity; a course believed favoured by the majority of companies carrying out the exploration and one that would speed up the publication of this report. In the past "write-ups" were prepared by I.A.N.D. District Geologists and submitted to the companies for approval.

Submissions covering wider areas than can be readily indexed by NTS have been divided and edited to achieve consistency of organization.

There are three Mining Districts in the Northwest Territories (Figure 3) and as of January 1976, the Mining Records for all districts will be stationed in Yellowknife, the Territorial Capital.

FUNCTIONS OF RESIDENT GEOLOGIST'S OFFICE

During 1973, the main functions of the Resident Geologist's Office at Yellowknife included: The operation of an information center for the mining and exploration industry, and other interested organizations or individuals through maintaining a geological library that includes technical assessment reports. Organizing a Geoscience Forum in conjunction with the Geological Survey of Canada and other organizations. Answering queries from prospectors, company personnel and other individuals with respect to mineral identification and potential exploration activity and other geological

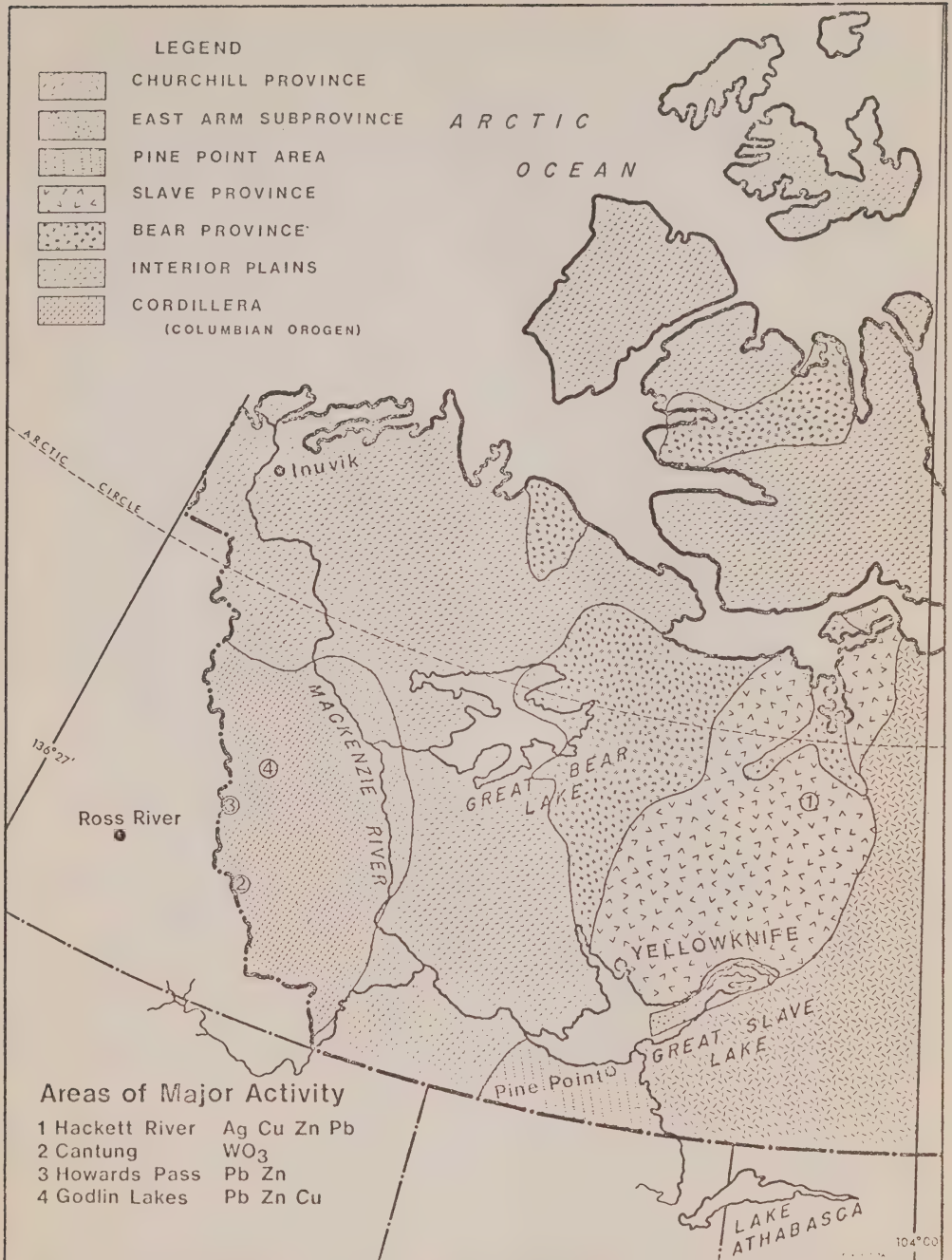


Figure 1. Subdivisions of the Mackenzie and Nahanni Regions showing areas of major prospecting and exploration activity in 1973 (1 to 4). The Nahanni District Geologist covered the Cordillera and most of the Interior Plains west of a line roughly through the west margins of Great Slave and Great Bear Lakes.

matters. Evaluation of assessment data submitted by companies and individuals, and of applications for Northern Minerals Exploration Assistance. Maintenance of a core library and core storage facilities in Yellowknife. Mapping areas of high mineral potential at the present scale of N.W.T. claim maps (1 inch to one half mile). White Eagle Falls (86-F/12) and High Lake (76-M/7), were mapped in 1973. Monitoring mineral exploration activity by visiting exploration camps and properties under development. Many thousands of miles were flown by the geologists involved in this activity. Expediting for Geological Survey of Canada and various university field crews operating out of Yellowknife.

MINING STATISTICS

Six mines operated in the N.W.T. during 1973, (Figure 3). Pine Point Mines Limited and Canada Tungsten Mining Corporation Limited, were open pit mines, the remainder were underground operations. Pine Point Mines Limited carried out approximately 3500 feet of underground development preparatory to mining the M-40 ore body and at Tungsten a decline was driven into a new ore zone and 7,827 feet of lateral development completed preliminary to underground production.

At Cominco's Con Mine a new shaft was collared to mine one million tons of ore grading 0.62 oz/ton Au on the extension of the Campbell zone delineated by underground exploratory work. This shaft is intended to reach the 5,600 foot level, and at the end of 1973 was 40 feet below the collar.

Production statistics are summarized in Table 1.

SUMMARY OF EXPLORATION ACTIVITY

The level of exploration activity in the N.W.T., which had subsided significantly in the years following the Pine Point and Coppermine discoveries, rose significantly during 1973 mainly due to much increased activity in the Cordilleran Province where a major lead-zinc discovery was made in 1972, and where wide-spread exploration for carbonate-hosted lead zinc deposits began. Since 1973, the level of activity has continued to rise in all areas except the Arctic Islands, as new discoveries, changing metal prices, and changes in mining regulations south of "sixty" have made the north a relatively more favourable exploration environment.

Renewed interest in exploration in the N.W.T. resulted in a dramatic increase in claim staking during 1973. A total of 15,303 claims were recorded compared with 5,555 in 1972, an increase of approximately 200%. Figures by mining district are given in Table II.

The spectacular staking increase in the Nahanni Mining District resulted from lead and zinc discoveries in the Mackenzie and Selwyn Mountains by Placer Development in late 1972 and by Welcome North Mines and others during 1973.

Table II compares geographic distribution of the 19 Prospecting Permits issued in 1973 to the 17 issued in 1972.

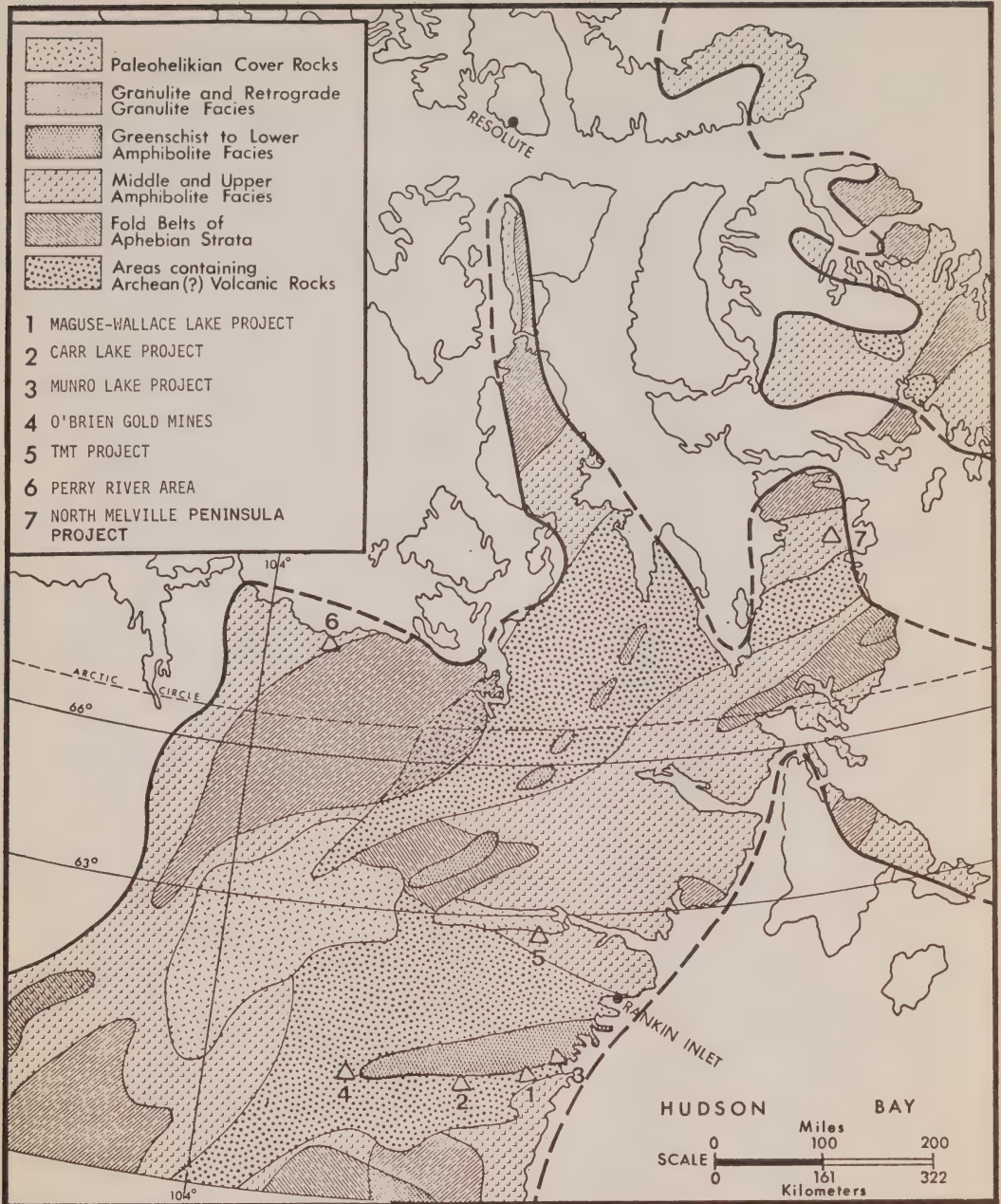


Figure 2. Geological sketch map of the Keewatin Region showing locations of some exploration projects, 1 to 7.

Southern, central and northern portions of the Keewatin are defined for this report by latitudes 63°N and 66°N.

TABLE I
STATISTICS FOR OPERATING MINES IN THE NORTHWEST TERRITORIES, 1973

COMPANY	Pine Point Mines Ltd.	Canada Tungsten Mining Corp.	Echo Bay Mines Ltd.	Terra Mining & Exploration Co.	Giant Yellow- knife Gold Mines	Con Mine (Cominco)
TYPE OF OPERATION	Open Pit	Open Pit	Underground	Underground	Underground	Underground
LOCATION	South shore of Great Slave Lake	125 miles north of Watson Lake Yukon	Great Bear Lake	10 miles south of Great Bear Lake	Yellowknife	Yellowknife
PRODUCT	Zinc-Lead	Tungsten	Silver- Copper	Silver- Bismuth- Copper	Gold	Gold
RATE, TONS PER DAY	10,790	452	98	113	1067	462
TOTAL TONS MILLED	3,896,357	165,000	37,393	38,787	389,460	168,696
GRADE	9.9% (Pb+Zn)	1.19% WO ₃	82 oz Ag/ton	41.4 oz Ag/ton	0.50 oz Au/ton	0.576 oz Au/ton
RESERVES MILLION TONS	41.9	Not Available	Unknown	Unknown	.745	1.68
EMPLOYEES	550	85	91	53	358	207

A marked increase in Permits issued in the Cordillera resulted from lead-zinc discoveries while in the Arctic Islands, there was increased claim staking to protect favourable ground.

In the Keewatin, Aquitaine Company of Canada Ltd. acquired four Prospecting Permits and Noranda Exploration one. Aquitaine flew major EM and magnetic surveys over the northeast end of the Ennadai-Rankin greenstone belt.

TABLE II
Comparison of claims staked and Prospecting Permits issued in 1973 and 1972

	Claims Staked		Prospecting Permits Issued	
	1972	1973	1972	1973
<u>Mining District</u>				
Arctic & Hudson Bay	2,022	4,386		
Mackenzie	2,940	7,158		
Nahanni	593	3,309		
<u>Region</u>				
Arctic Islands			10	5
Bear & Slave Provinces			3	1
Cordilleran Area			3	1
Keewatin			1	5
Melville Peninsula			--	1

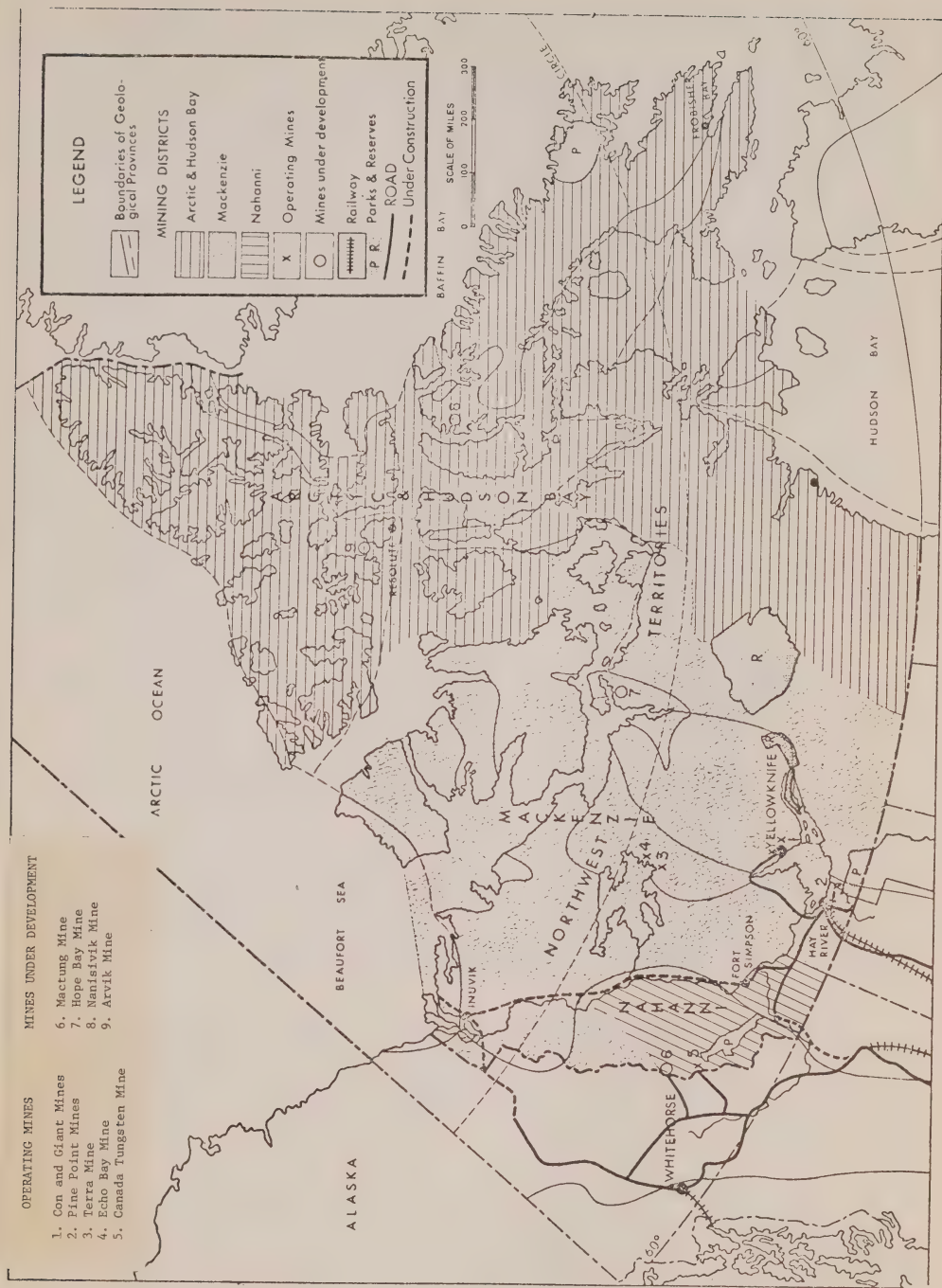


Figure 3. Mining Districts and areas reserved from staking (Parks and Reserves) in the Northwest Territories.

Important developments in 1973 included the completion of a feasibility study on the Strathcona Sound deposit on Baffin Island, and underground developments of the Polaris property owned by Arvik Mines Ltd. on Little Cornwallis Island. Hope Bay Mines carried out underground exploration programs on their silver property at two locations one near Roberts Bay the other at Angimayor Sound on the Arctic Coast. In the south Keewatin District O'Brien Gold Mines Ltd. drilled to evaluate a gold deposit associated with iron formation in metasedimentary rocks.

Increased gold prices stimulated staking activity in the southern half of the Slave Province, but the impact of the dramatic price increase was less than anticipated. Interest focused on low grade properties with substantial tonnage potential rather than on the smaller high grade gold quartz showings in the sediments of the Yellowknife Supergroup. A lack of systematic and reliable sample data for many of these smaller deposits, particularly where values occur as widely dispersed visible gold makes their assessment difficult.

Base metal exploration in the northern part of the Slave Province has gained considerable impetus from discoveries on the Bathurst Norsemines Ltd. property in the Hackett River Area, and by recent geochemical work carried out by the Geological Survey of Canada. In the course of this work attention was directed to areas of felsic volcanic rocks not shown on published maps. Surveys following up lake sediment sampling identified zones where exhalative type zinc-copper-silver mineralization might be anticipated.

Ecstall Mining Ltd explored a volcanic belt at the south end of Takijuk Lake which they had identified through an extensive exploration program in the Slave Province volcanic belts. Parts of this belt are not evident on published geological maps.

Near the eastern margin of the Slave Province at Clinton-Colden Lake considerable staking followed discovery of high grade sphalerite boulders overlying a poorly exposed contact zone between felsic and mafic volcanics.

Except for geochemical follow-up over magnetic anomalies by Seaforth Mines near Hottah Lake, work in the Interior Plains was confined to the Pine Point Area, where Pine Point Mines Ltd. and Conwest Exploration Ltd. (in two joint ventures) carried out drilling programs.

Uranium exploration in the Bear Province covered three Prospecting Permits and adjacent claim blocks east of Terra Mines and an area south of the Dismal Lakes. Silver exploration on the peninsula adjacent to Terra Mine involved scintillometer and EM 16 surveys by Terra Mines Ltd. Duke Mining Ltd. drilled on claims some four miles south of Terra Mine.

Copper exploration was done on the MJ claim group two miles south of the Terra Mines Ltd. airstrip by Seaforth Mines Ltd. and in the Wildbread Bay area in the East Arm Subprovince where Giant Yellowknife Mines Ltd. drilled two claim groups.

In the East Arm Subprovince Milchem Ltd. worked on a barite deposit four miles west of Snowdrift. East of Nonacho Lake in the western Churchill Province, a copper showing was staked (GIN claim).

A vein type galena occurrence on an island in Bathurst Inlet was traced and prospected over a strike length of over 2,000 feet and the WOLF claims staked to cover it. Geological reconnaissance performed by Great Plains Development Company of Canada Ltd. led to the staking of a claim group near Aylmer Lake. Shield Resources Ltd. carried out preliminary survey work, preparatory to an underground program on the WT group near Dome Lake.

Most of the activity in the Keewatin District was concentrated south of latitude 63 degrees in the Ennadai-Rankin greenstone belt. Groups active in the area included Aquitaine Company of Canada Ltd., Five Star Petroleum and Mines Ltd., Freeport Canadian Exploration Company Ltd. and O'Brien Gold Mines Ltd.

Numerous regional geochemical and/or prospecting programs were carried out in the Godlin Lakes area of the Cordillera by Welcome North Mines Ltd., Dynasty Explorations Ltd., El Paso Mining and Milling Company, Rio Tinto Canada Exploration Ltd. Similar regional programs were conducted in the Howards Pass area by Cominco Ltd., Newmont Mining Corporation of Canada, Quintana Minerals and a consortium headed by Dynasty Exploration Ltd. which included Shield Resources Ltd., Atlas Exploration Co. Ltd., and Numac Oil and Gas Ltd. Near Godlin Lakes Mississippi Valley type lead-zinc and locally silver-copper veins were the target whereas at Howards Pass the search was mainly for lead-zinc in dark carbonaceous shales. Numerous claims acquired in the Howards Pass and Godlin Lakes areas during the staking rush in the Cordillera were prospected by various companies.

Amax Northwest Mining Co. Ltd. prospected quartz monzonite stocks in the Cordillera between Tungsten and MacMillan Pass.

Work in the Arctic Islands was mainly limited to lead-zinc exploration by Cominco Ltd. and Canadian Superior Explorations Ltd. in Paleozoic carbonates particularly the Thumb Mountain Formation of Middle Devonian age.

On Baffin Island lead-zinc targets are in the Helikian dolomites of the Society Cliffs Formation which contain the Strathcona Sound deposit.

Diapros Ltd. staked ground over kimberlite pipes on Somerset Island and carried out some bulk sampling.

Extensive reconnaissance work done outside claim or permit boundaries is rarely reported in assessment submissions and cannot, in most cases, be described. Such programs were carried on in various parts of the territories by some of the major companies.

Descriptions of properties in the Keewatin District and on the Melville Peninsula were done by P.J. Laporte, Keewatin District Geologist. Properties in the Arctic Islands, on Baffin Island and in the central Mackenzie District were mainly described by J.B. Seaton, Mackenzie District Geologist, and those in the Cordilleran Structural Province mainly by J.D. Murphy, Nahanni District Geologist in 1973 and 1974. W.A. Padgham prepared a few of the descriptions for the Nahanni and Mackenzie Districts, wrote most of the introductory material and was responsible for preliminary editing, compilation, and checking of the report. The authors acknowledge with thanks Mrs. M. Sigvaldason, Mrs. M. A. Campbell and Miss A. McLeod for their assistance in typing and preparation of this report.

KEEWATIN DISTRICT AND MELVILLE PENINSULA

In 1973 the Keewatin District Geologist covered the Keewatin District, the Melville Peninsula of the District of Franklin, and a narrow strip of the Mackenzie District between 102° and 104° west longitude in which very little exploration took place. This whole region lies within the Churchill Structural Province of the Canadian Shield which is underlain by Precambrian rocks deformed by the Hudsonian Orogeny. Locally younger rocks overlie the metamorphic complex. These rocks are generally flat lying and unaffected by metamorphism.

In the report that follows the Keewatin District has been divided arbitrarily along the 63 and 66 degrees of latitude into southern, central and northern districts, Figure 2. Within these areas, and on the Melville Peninsula most properties are adjacent to or encompass lakes on which most types of fixed wing aircraft can land.

SOUTHERN DISTRICT OF KEEWATIN

The southern District of Keewatin (Figure 2) is underlain by a basement complex of intrusive gneisses and granitic rocks which enclose a large northeasterly trending belt of polymetamorphic Archean supracrustal rocks, the Ennadai-Rankin greenstone belt. Most of the mineral exploration in the southern district is a search for volcanogenic base metal sulphide deposits within this belt (Figure 4). Gold deposits are also known and one is under active development towards the southwest end of the Archean belt.

Most companies were active in the Heninga-Carr-Kaminak Lakes area. Aquitaine Company of Canada Limited explored the eastern part of the belt and O'Brien Gold Mines Limited drilled their gold prospect west of Henik Lakes.

MAGUSE LAKE - WALLACE RIVER PROJECT
Aquitaine Company of Canada Limited
2000, 540 Fifth Avenue Southwest,
Calgary, Alberta

55 E/9,10,11,13,14,15; F/13
(61°45'N, 94°30'W)

REFERENCES

Davidson (1970b) Ridler (1971, 1972, 1973)

PROPERTY

Prospecting permit 297	55 E/9
Prospecting permit 298	55 E/10
Prospecting permit 299	55 E/14
Prospecting permit 300	55 F/13

WEA 1-11, WEB 1-11, WEC 1-8	T76250-79	55-E/11
WAA 1-12, WAB 1-2, WAC 1-11	T76701-25	55-E/13
WAD 1-15, WAE 1-5, WAF 1-4	T76226-49	"
WIA 1-4, WIB 1-4	T76280-87	55-E/15

LOCATION

The claim groups and Prospecting Permits 297, 298 and 299 cover parts of the area northwest of Turquetil and Maguse Lake and north of Maguse River. Prospecting Permit 300 extends west from the head of Dawson Inlet. Much of the area between location 1 and the coast of Hudson Bay was covered by this project, (on Figure 2 page 5).

HISTORY

The Prospecting Permits were acquired by the Aquitaine Company of Canada Limited in April 1973 and the 87 claims were added during the summer to cover anomalies detected by airborne surveys.

DESCRIPTION

The project studies cover the southern part of the northeast end of the Ennadai-Rankin greenstone belt. Rocks exposed within the permit areas and claims consist of metamorphosed volcanic and sedimentary rocks of the Kaminak Group which are intruded to the west, north and east by large granitoid plutons and to the northwest by a number of smaller plutons. The volcanic rocks, which are commonly pillowed, range in composition from basalt, with related gabbroic intrusions, to dacite. Sediments range from quartzite to shale and include numerous layers of magnetite iron-formation.

Ridler has subdivided the Kaminak Group, within the belt, into volcanic cycles, a number of which outcrop in the project area. The southwestern corner of Prospecting Permit 299 is underlain by the second oldest cycle (units 3 and 4, Ridler, 1973) which is intruded to the west by the Turquetil Batholith and overlain to the east by the mafic basal member of the next cycle (unit 5, op. cit.). The easternmost permit is underlain by the basal mafic volcanic member of the youngest cycle and the overlying predominantly sedimentary upper member of the cycle (unit 7 and 8, op. cit.).

CURRENT WORK AND RESULTS

A 4075 line-mile INPUT EM and magnetic survey flown over the area in early 1973 was followed by reconnaissance geology and prospecting by a four-man crew during a two-week period and ground electromagnetic and magnetic surveys by a four-man crew over 15 of the anomalies detected. The conductive sources have not been identified.

CARR LAKE PROJECT
Canadian Superior Exploration Limited
2201, 1177 West Hastings Street,
Vancouver, British Columbia.

Cu, Zn
55 E/13, 14, L/4; 65 I/1
(62° 00' N, 95° 30' W)

REFERENCES

Bell (1971); Davidson (1970a, 1970b); Laporte (1974b); Ridler (1974)

PROPERTY

Prospecting Permit 268	55 L/14	
Prospecting Permit 269	65 I/1	
KAILA 1-12, SIKSIK 1-16, TUKTU 1-12,	A4521-72	55 E/13
NO 2,3,6 A4795, 96, 98; P 5-10	A27495-500	55 E/14
AMOW 1-14, CL 1-4, 10-15, 17, 18	A4605-16	55 L/4
C 1-221, (128 claims) A27201-21 and	A4624-26	"
HOPE 1-9, NO 1,4,7, PAUL 1-34	A4752-98	"
WENDY 1-41, A4701-41 and T19023		65 I/1

LOCATION

The Prospecting Permits extend west from five miles east of Carr Lake to the east shore of a major widening of the Kogtok River. Most of the claims are in a northwest-trending zone two miles west of Carr Lake. CL claims were staked 10 miles north of Carr Lake, the PAUL and WENDY claims are centred eight miles northwest of the lake and the HOPE claims cover part of the south-trending arm of the lake. The P claims and three C claims are on the north shore of Maguse Lake southeast of Turquetil Lake, approximately at 2 on Figure 2, page 5.

HISTORY

All but 47 of the C claims were allowed to lapse and the HOPE, PAUL and WENDY claims were added to the company's holdings in the summer of 1973. The Prospecting Permits lapsed in April 1974.

DESCRIPTION

The area west of Carr Lake is underlain by the volcanic-sedimentary assemblage of the Kaminak Group (Davidson 1970a, 1970b and Bell 1971). Hornblende gabbro and tonalite intrude the Kaminak Group to the east, north and south of Carr Lake, porphyritic biotite adamellite outcrops east of the lake and equigranular granite intrudes the metasediments to the northwest.

MORSO ISLANDS CLAIMS

Mont-Alta Projects Limited
c/o J. Antoshkiw
278, 1620 Eight Avenue Northwest
Calgary, Alberta

Cu, Au, Ag.
55 K/2
(62°02'30" N, 92°40'W)

REFERENCES

Laporte (1974a, 1974b); Wright (1967).

PROPERTY

MAR 1-18 T99137-54

LOCATION

The claims extend southeast across the central part of the southern-most Morso Island near the west shore of Hudson Bay.

HISTORY

The MAR claims were staked in 1969 and cover ground previously prospected but not staked by Tavane Explorations Limited. The claims were acquired by Mont-Alta Projects Limited in early 1973.

DESCRIPTION

Morso Island consists of intermediate to basic volcanic rocks and derived amphibole schist and gneiss.

CURRENT WORK AND RESULTS

The MAR claims were examined briefly during the summer of 1973 and two trenches were blasted and two holes totalling 194 feet were drilled on the MAR 18 showing described by Laporte (1974a).

WHALE COVE CLAIMS

Mont-Alta Projects Limited
c/o J. Antoshkiw
278, 1620 Eight Avenue Northwest
Calgary, Alberta

Cu, Ni, Au.
Molybdenum
55 K/2
(62°27'N, 92°34'W)

REFERENCES

Heywood (1973), Laporte (1974a)

PROPERTY

HI 1-36 A42051-86
MINE 1-20 A42322-41

LOCATION

The claim group covers the peninsula trending north from Whale Cove, from 1 mile to 3 miles north of the cove.

HISTORY

Tavane Explorations Limited prospected the Whale Cove peninsula in 1961 and staked two showings in the eastern and northeastern part of the peninsula. The CAT claims showing, to the northeast, were explored by trenching, drilling, mapping and EM surveying. The JAN claims gold showing was trenched.

Seventy-two MAR claims staked by John Gorski for Maroubra Holdings Limited in September 1969 lapsed in late 1972 and early 1973 (Laporte, 1974a). J. Antoskiw re-staked the ground as the MINE and HI claims in November 1972 and April 1973.

DESCRIPTION

The HI and MINE claims are underlain by massive to pillowed mafic volcanic rocks of the Kaminak Lake Group in fault contact with sedimentary rocks of the same group lying to the north, and intruded to the east and west by quartz diorite, granodiorite, and quartz monzonite.

A number of gossans in shear zones, tuff bands and along joints were trenched by Tavane Explorations Limited and Maroubra Holdings Limited (Laporte, 1974a). The Cat showing consists of an 8 by 40 foot occurrence of massive chalcopryite containing 6.78% to 24.38% Cu.

CURRENT WORK AND RESULTS

Four holes totalling 661 feet of diamond drilling and nine trenches tested various showings in the claim group. Three holes and one trench probed the extensions of the chalcopryite showing on claim HI 10 which is probably the CAT showing drilled by Tavane Explorations Limited. One trench was blasted on a gold showing at or near the contact between the volcanics and west intrusion north of the old Jan showing. The remaining seven trenches were blasted on chalcopryite showings in the centre of the group and chalcopryite-molybdenite showings in the southeastern corner of the group.

G. B. Allen briefly examined the claim group in August 1973 and reported pyrite, pyrrhotite, chalcopryite and minor chalcocite in north-northeast trending shear zones cutting mafic volcanics.

IT CLAIMS

W. H. Shenton
c/o J. A. Syme
503 - 491 Portage Avenue
Winnipeg, Manitoba

Au
55 K/4
(62°11' N, 93°56' W)

Coniagas Mines Ltd.
401, 25 Adelaide Street W.
Toronto, Ontario

Denison Mines Ltd.
20th floor
4 King Street West,
Toronto, Ontario

REFERENCES

Heywood (1973), Ridler (1971, 1972, 1973)

PROPERTY

IT 1-24 A42281-88, A41274-89

LOCATION

The centre of the claim group lies nine miles southwest of the southeast end of Lost Lake and 24 miles west of the deserted village of Tavani on the coast of Hudson Bay.

HISTORY

Prospectors working for the Hudson Bay Mining and Smelting Company Ltd., discovered, trenched and pitted the showings in the mid 1940's. The area was staked in 1964 and re-staked by the present owner in April, 1973. The claims were optioned to Denison Mines Ltd. and Coniagas Mines Ltd. in 1973.

DESCRIPTION

The claims cover part of a northeast-trending belt of pillowed Kaminak Group mafic volcanic rocks (unit 1, of Heywood, 1973; unit 7, of Ridler, 1973).

CURRENT WORK AND RESULTS

A two to three man crew spent three weeks evaluating the claim group in July and August, 1973. Numerous quartz-calcite veins occurring *en echelon* east to northeast-trending shear zones were sampled. Quartz-calcite veins 75 to 100 feet long and up to 3 feet wide occur in the northeast corner of claim IT 17 and contained values as high as 1.45 oz/ton Au over 2 feet. A sulphide rich sample from a 6 foot wide 150 foot long quartz vein containing chalcopryrite and minor chalcocite assayed 1.04 oz/ton Au, 1.86 oz/ton Ag, and 6.07% Cu. This vein outcrops on IT 16. Pits on vein

systems on IT 8 and IT 13 were resampled. Assays as high as 0.625 oz/ton Au over two feet were obtained from the system on IT 13.

A strongly carbonated andesite 30 to 40 feet wide and 650 feet long trends north along the west boundary of IT 9. Quartz carbonate veins and stringers forming this zone and the surrounding wall rocks contain disseminated pyrite and locally chalcopyrite but very little precious metals.

MUNRO LAKE PROJECT
Selco Mining Corporation Limited
55 Yonge Street
Toronto, Ontario

Cu, Zn
55 K/5; L/8
(62°25'N, 93°50'W)

REFERENCES

Davidson (1970a); Heywood (1973); Laporte (1974b); Ridler (1971, 1972, 1973)

PROPERTY

A43607-21, 634-50; A81090-91; A81565-86	55 K/5
A39901-14, 954-89; A43501-83; A43622-33;	55 L/8
A81006-09, 048-055	"
HE 1-296 A40901-196	"

LOCATION

The HE and 108 of the unnamed claims form a block covering Helika Lake and the north shore of Munro Lake. The remaining 102 claims lie in six detached blocks: A43555-83, A43622-33, A81048-55, A43607-21, 34-50 and A81565-82 and A81006-09 to the west, north and east of the main block within the area bounded by 62°20' to 62°28'N and 93°40' to 94°25'W. The area covered lies approximately at locality 3, Figure 2, page 5.

HISTORY

Messrs. G. Heroux and L. Surprenant staked 50 unnamed claims in the summer of 1972 to cover their copper-bearing float discovery north of Munro Lake. Selco Mining Corporation Limited optioned the claims and staked the HE claims in March 1973. The outlying blocks of claims were staked to cover anomalies outlined by a geophysical survey flown in May 1973. The option on the Heroux-Surprenant claims was dropped after the 1973 field program.

DESCRIPTION

The various claim groups cover parts of a volcanic sequence consisting of massive and pillowed basaltic to andesitic greenstones (unit Am, Davidson, 1970a; and unit 1, Heywood, 1973), to the north and south, enclosing a band of greywacke, slate (unit As, Davidson, 1970a) felsic tuff, agglomerate and flow breccia (unit Af, *op. cit.*). A gabbroic mass intrudes the volcanic rocks northeast of Helika Lake and a small circular mass of

quartz diorite, granodiorite and monzonite intrudes the volcanic rocks further east. The sedimentary and volcano-clastic members of the volcanic sequence are correlated by Ridler (1973) with the upper part of the fourth volcanic cycle (unit 8).

CURRENT WORK AND RESULTS

Airborne EM and magnetic surveys over the optioned claims and adjacent portions of the volcanic belt in 1973 were followed by geological mapping at a scale of one inch to 1/4 mile, 80 line-miles of horizontal-loop EM and magnetic surveys, a limited amount of frost-boil geochemistry and diamond drilling. Five holes which tested geophysical anomalies on the north side of Munro Lake showed that the conductors were explained by bands of graphitic sediments within a series of intermediate to acid tuffs and argillites. Detailed examination of the optioned claims did not find evidence of economic mineralization.

DEB, EVE
D.F. Hurd
Box 815
Kirkland Lake, Ontario

Au
55K/6
(62°23'N, 93°20'30"W)

REFERENCES

Heywood (1973); Laporte (1974a, 1974b); Ridler (1971, 1972, 1973)

PROPERTY

DEB 1-5 A81021-25
EVE 1-6 A80116-20, 28

LOCATION

The claims are centered one mile northeast of the rapids between Marge Lake and Whiterock Lake.

HISTORY

The area, 55K/6 was held under Prospecting Permit 17 by North Rankin Nickel Mines Limited in 1961 and 1962.

An EM and magnetic survey by Hunting Airborne Geophysics Limited in 1959 located 11 anomalies which were tested by ground geophysics accompanied by regional geological mapping and prospecting in 1961. The Bannock Lake showings were discovered by R. Maloney and P. McLeod during this exploration.

Airborne exploration of Husky Oil Limited's Prospecting Permit 202 (55K/6) in 1970 included 2400 line-miles of radiometric and 1324 line-miles of EM/magnetic surveys. Anomalies were investigated by prospecting, trenching and by ground geophysical and geological surveys in 1970 and 1972, (Laporte 1974a, 1974b). The permit expired in 1973.

In June, 1973, R. Kasner and E. Bazinet, guided by P. McLeod, staked the DEB and EVE claims to cover the southeasternmost "Bannock Lake" showing for a group of prospectors led by D. Hurd.

DESCRIPTION

The southeast half of the claim group is underlain by northeast-striking quartzite, slate and mudstone of the Hurwitz Group that are underlain to the northeast by sediments of the Kaminak Group. The latter are in fault contact to the west with mafic volcanics of the same Kaminak group.

The Kaminak Group sediments were mapped in 1961, as boulder conglomerate containing well-rounded granitic boulders up to 30 inches in diameter, impure quartzite and fine grit which grades into conglomerate. The southeastern "Bannock Lake" showing is a discontinuous quartz vein as much as 5 feet wide dipping 60° east in conglomerate. It contains visible gold as does a second showing one mile to the northeast. This showing consists of quartz veining in a shear zone which extends from a conglomerate band northeast across a fault into fine grained andesite and glassy rhyolites. The quartz vein is 5 feet wide, dips 80° east and locally, contains nearly massive sulphides. A sample from this area contained 0.19 oz./ton Au.

CURRENT WORK AND RESULTS

In October, 1973, ten trenches were blasted by D. Hurd along a northeast-trenching zone apparently coincident with the southeastern "Bannock Lake" showing. Samples collected from the trenches gave maximum assays of 1.68 and 1.65 oz./ton Au. Some of the samples contained visible gold.

DEE
Giant Yellowknife Mines Limited
under option to:
Freeport Canadian Exploration Company,
40 University Avenue,
Toronto, Ontario

Cu, Zn, Ag, Au
55 L/4
($62^{\circ}04'11''\text{N}$, $95^{\circ}52'50''\text{W}$)

REFERENCES

Davidson (1970a), Laporte (1974a, 1974b); Ridler (1973, 1974);
Ridler and Shilts (1974)

PROPERTY

DEE 1-3, 7,8, 11-14, 19-22 17453-500, 27155-66
24-29, 35-40, 44-52, 55-64

Location

The DEE claims cover the north shore of a lake centered two miles southeast of Carr Lake.

HISTORY

Sixty-four DEE claims were staked for Giant Yellowknife Mines Limited in August 1960 to cover a copper-zinc showing discovered by a helicopter supported geological survey. Reconnaissance geological mapping and trenching, done in 1960, were supplemented in 1961 by 272 line-miles of EM and magnetic surveys, detailed geological mapping and 7,418 feet of diamond drilling and in 1972 by a ground EM survey.

DESCRIPTION

Massive and pillowed basaltic and andesitic greenstones underlying the northern part of the claim group are in contact to the south with felsic tuff, agglomerate and flow breccia and are intruded to the east by massive grey hornblende tonalite (units Am, At and 2 respectively Davidson 1970a). The felsic volcanics are part of the second oldest cycle of volcanism recognized in the Kaminak Lake area (Ridler, 1973). The maximum thickness of the felsic part of the cycle exceeds 15,000 feet in the vicinity of Spi Lake but thins along strike to the north and east. A sulphide exhalite zone lies midway up the felsic unit at the top of a prominent rhyolite unit overlain by an andesite breccia unit. The arcuate exhalite zone trends southeast then east from the sulphide showing.

Pyrite, pyrrhotite, sphalerite, chalcopyrite and galena occur in irregular northwest-trending zones within the acid fragmentals. The surface showings first explored are irregular pod-shaped bodies one of which consists of massive sulphides and outcrops over an area 130 by 30 feet. Channel samples of this zone averaged 10.65% Zn, 0.72% Cu and 0.39oz./ton Ag over 25 feet. A hole drilled to probe the showing at a depth of 200 to 300 feet, intersected a four-foot section of disseminated chalcopyrite assaying 1.92% copper.

Two buried mineralized zones were intersected during the diamond drilling. The southerly zone, under the west arm of the lake, was intersected in three holes and has a strike length of approximately 700 feet. The second zone, 1,200 feet to the northwest with a strike length of 600 feet, was intersected in four holes. The best intersections were:

Hole number	Intersection width (feet)	Au oz/T	Ag oz/T	Cu%	Zn%	Pb%
<u>Southerly Zone</u>						
6	14	0.025	0.68	0.10	4.25	1.0
7	12				1.35	
14	39	tr	0.21	0.07	2.26	
	10	0.005	0.92	0.04	2.30	
16	6	0.017	1.37	5.05		
<u>Northerly Zone</u>						
10	26	tr	0.23	0.03	1.26	
	11	tr	0.49	0.03	3.11	

CURRENT WORK AND RESULTS

In early 1973, 5595 feet were drilled in nine holes to test the down-dip extension of the sulphide zones intersected in 1961. Although interesting copper-zinc concentrations were encountered, it was concluded that the showings are the only remnants of what may have been a major deposit.

B-ZONE GOLD DEPOSIT
O'Brien Gold Mines Limited
607 - 80 Richmond Street West
Toronto, Ontario

Au
65 G/7, 8
(61°17'N, 98°31'W)

REFERENCE

Eade (1973)

PROPERTY

ANT 37-44,	N33057-64	65 G/7
GILT 1-15, 17-22, 25-29	A42232-56	"
PAT 49-53,	N27724-28	"
DWE 1-3	A81308-310	65 G/8
JOE 1-18	N33065-82	"

LOCATION

The main claim group extends north from just west of a widening of the Kognak River to Cullaton Lake. The five PAT claims are three miles southwest of Cullaton Lake, location 4, Figure 2, page 5.

HISTORY

The B-zone prospect discovered by Selco Exploration Company Ltd.'s prospectors in 1961 was explored in 1962, 1963 and 1964 by trenching, airborne and ground magnetometer surveys, boulder sampling, geological mapping and 20,000 feet of diamond drilling in 39 holes. Reserves were estimated at 100,000 tons containing 1.0 oz/ton Au. Seven BEE and 36 of the ANT claims covering the B-zone lapsed in 1972 and were restaked as the GILT claims by Hewbet Mines Limited (50%), Royex Mining Limited (25%) and Sturgex Mines Limited (25%). In 1973, Hewbet Mines Limited sold its interest in the property to O'Brien Gold Mines Limited who also acquired an option on the interests of the other two companies. Selco Exploration Company Limited was granted a 10% interest in the project in return for data from earlier work.

The three DWE claims were staked in 1973 during the exploration program. The 18 JOE, 8 ANT and 6 PAT claims had lapsed by early 1974.

DESCRIPTION

The claims are underlain by a moderately sheared sedimentary sequence mapped as greywacke (unit 2, Eade, 1966) and enclosing acid to intermediate volcanics. This sequence also encloses highly-shattered poorly-layered magnetite-chert and siderite-chert iron formation containing abundant carbonates and chlorite and re-cemented by quartz and calcite. The iron formation has a discontinuous strike length of 5,000 feet with the B-zone gold deposit occupying 500 feet of a 1,300-foot fairly continuous segment. The thickness of the iron-formation appears to have been originally 50 to 75 feet but as a result of faulting and folding now varies from 15 to 100 feet.

CURRENT WORK AND RESULTS

In 1973, O'Brien Gold Mines Limited drilled 10,868 feet in 29 holes to provide sections at 50-foot intervals along strike. This work showed four structurally controlled areas of gold concentration cutting across the iron formation at angles of 45° to 65° . A flat-lying fault is believed to displace the iron formation 50 to 60 feet easterly at a depth of 400 feet.

Drill indicated ore reserves are 148,000 tons containing 1.50 oz/ton Au before dilution, or 177,000 tons of 0.9 oz/ton Au after 20% dilution.

MAG
Hudson Bay Exploration and Development
Company Limited
P.O. Box 28
Toronto-Dominion Centre
Toronto 1, Ontario

Au, Ag
65 H/16
($61^{\circ}48'N$, $96^{\circ}08'W$)

REFERENCES

Bell (1971), Ridler (1973)

PROPERTY

MAG 1-53 A44273-300; A43277-300; A44301 65 H/16

LOCATION

The claim group is centered four miles east of the southern part of Heninga Lake.

HISTORY

The MAG claims were recorded for Hudson Bay Exploration and Development Company Limited in July 1973.

DESCRIPTION

The northern half of the claims is underlain by undifferentiated volcanic rocks, largely pillowed volcanics and agglomerate enclosing mafic and felsic flows, and intruded to the south by massive grey hornblende tonalite (units Av and 2, and Bell 1971). Ridler (1973) includes the volcanic rocks underlying the northwest third of the claims in the upper part of his first volcanic cycle which is a complex of intermediate to felsic breccias, tuffs, flows and exhalite zones. The mafic lower part of the second cycle trends northeast across the claims and the upper part of this cycle outcrops in the southeast corner of the group.

CURRENT WORK AND RESULTS

Prospecting in the area located two mineralized exposures but three miles of horizontal loop EM survey covering portions of claims MAG 16, 17, 26, 27, 30 and 45 yielded negative results. Samples for a geochemical survey of the claim group, were collected from frost boils at 750-foot intervals. Samples were dried and sized. Material between 250 mesh and 2 microns and material finer than 2 microns were analysed separately for copper, zinc, nickel and lead after hot nitric acid leach. Three copper, three zinc, one lead and three nickel anomalies were detected. Anomalies produced by the two showings were detected only in the finer fraction of the samples.

The southwestern showing consists of galena, sphalerite, chalcopryite and pyrite in a quartz vein trending 055° and dipping 45° southeast at the northeast corner AG 17. The 8-inch wide and 230-foot long vein occurs in a quartz porphyry sill. Three chip samples 0.7 foot long assayed 0.01, 0.26 and 2.92 oz/ton Au; 0.51, 26.02 and 162.40 oz/ton Ag; 0.0, 0.85 and .36% Cu; 0.1, 0.4 and 0.3% Zn and trace, 0.07 and 1.81% Pb.

The northeastern showing, in the east-central portion of claim MAG 31 consists of disseminated pyrite, sphalerite and minor chalcopryite in sheared phylolite. The 24 foot wide by 60 foot long zone strikes 035° and dips 80°.

YANDLE-KAMINAK PROJECT
Noranda Exploration Company Limited
Box 45, Commerce Court West
Toronto, Ontario

55 E, K, L, 65 H
(61°52'30"N, 96°45'W)

REFERENCES

Bell (1970, 1971); Davidson (1970a, 1970b); Heywood (1973).

PROPERTY

Prospecting Permit 302

65 H/15

CASS 1-4, A80005-08

55 E/12, 65 H/9

BOX 1-10, A51215-28

55 E/13

WEB 1-4, A80001-04		55 K/6
CAT 1-8, A43093-100		55 K/7
ANGUS 1-14, A43037-50	ART 1-40 A43101-40	55 L/4
BOB 1-4, A43033-36	CAR 1-6, A43027-32	"
JON 1-6, A43021-26	KAM 1-80, A43141-200 A43001-20	55 L/6
HEN 1-22, A43085-92	A51201-02 A51233-44	65 H/9
INK 1-22, A51212-14, 45-49	A80009-10, 19-30	"
LEG 1-30, A81212-31	MID 1-33, A80069-100 A81301	"
SINK 1-8, A80011-18		"
BAY 5-10, 19-24, 29-38, 41-50,	A51211 A51292 A80035-66 A81232-41	
BOOT 1-10, A43075-84	CHRIS 1-2, A43056-7	65 H/16
DOG 1, A43074	HUD 1-6, A51250-55	"
LOGAN 1-7, A43058-64	LOU 1-4, A43052-55	"
PETE 1-9, A43065-73	SON 1-4, A51256-59	"
STURQ 1-15, A51229-232	A51260-70	

LOCATION

The permit area extends west 17 miles from the east shore of Yandle Lake and includes Kinga Lake. The CAT claims are centered two miles north of Wilson Bay and nine miles southeast of Pistol Bay. The WEB group is centered 2.5 miles north of the rapids at the head of Wilson Bay. Locations of the western claim groups are given in Figure 4. The Yandle-Kaminak project covered the area approximately between 1 and 2 Figure 2.

HISTORY

Noranda Exploration Company Limited obtained Prospecting Permit 302 in 1973 and staked numerous claim groups that summer to cover areas of geophysical and geological interest.

DESCRIPTION

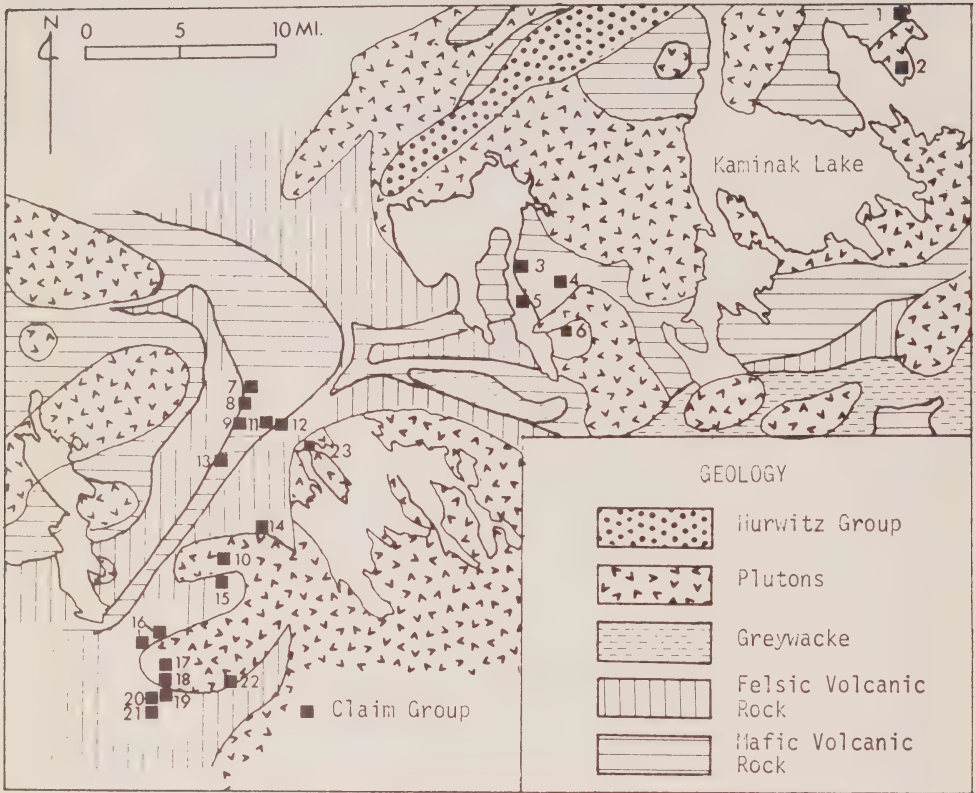
The permit area is underlain by mafic to felsic volcanic rocks of the Kaminak Group and their metamorphosed equivalent. Hornblende diorite or leucogabbro and biotite adamellite intrude the metavolcanics in the northwest quarter and southeast corner of the permit area. The Montgomery Lake sediments and sedimentary members of the Hurwitz Group overlie the metavolcanics along the west shore of Kinga Lake and in the southern part of the permit area.

The claim groups cover mafic and felsic volcanic rocks of the Kaminak Group.

CURRENT WORK AND RESULTS

Questor Surveys Limited carried out a 1,500 line-mile INPUT and magnetometer survey in the Yandle Lake - Heninga Lake area during the summer. Two surveys, orientated in different directions and totalling 390.5 line miles, were done over the southeastern part of the permit area. A nine-man crew prepared a geological map of the permit area at a scale of one half mile to one inch. The geology of most of the claim groups was also studied.

NORANDA CLAIM GROUPS IN THE KAMINAK LAKE AREA



Noranda Claim Groups

- | | | |
|---------------|----------------|--------------|
| 1. KAM 1-80 | 11. PETE 1-9 | 17. HEN 1-22 |
| 2. JON 1-6 | 12. DOG 1 | 18. MID 1-33 |
| 3. CAR 1-6 | 13. BOOT 1-10 | 19. INK 1-22 |
| 4. BOB 1-4 | 14. STURQ 1-15 | 20. LEG 1-30 |
| 5. ART 1-40 | 15. HUD 1-6 | 21. SINK 1-8 |
| 6. ANGUS 1-14 | 16. BAY 5-10 | 22. CASS 1-4 |
| 7. LOU 1-4 | 19-24 | 23. BOX 1-10 |
| 8. CHRIS 1-2 | 29-33 | |
| 9. LOGAN 1-7 | 34-38 | |
| 10. SON 1-4 | 41-50 | |

Figure 4. Geological sketch map showing Noranda Mines Ltd. claims in relation to the geology in the Kaminak Lake area. Geology from Ridler (1973, 1974).

K GROUP
Columbian Northland Limited
1570 Elveden House
Calgary, Alberta

Cu, Zn
65 I/4
(62°10'N, 97°54'W)

REFERENCES

Laporte (1974a, 1974b); Wright (1967).

PROPERTY

K 1-18, A28085-99; A33001-03

LOCATION

The claims cover the south edge of a group of northeast-trending lakes 10 miles northwest of Imikula Lake.

HISTORY

The K claims were staked in March 1972 after ground magnetometer and geological surveys in 1971.

DESCRIPTION

The rocks underlying the claims were subdivided in 1971 into massive and bedded units composed of interbedded andesite, rhyolite, tuff and grey-wacke, part of a five- to twenty-five mile wide greenstone belt extending 100 miles from Sutcliffe Lake to east of Yathkyed Lake.

CURRENT WORK AND RESULTS

A two-man crew spent one day on the claims, examined and sampled a number of quartz veins and traversed magnetic anomalies.

CENTRAL DISTRICT OF KEEWATIN

The Central District of Keewatin is mainly underlain by a basement complex of gneisses and gneissic to massive granitic intrusions enclosing metasedimentary and metavolcanic rocks of Archean and Aphebian age. Overlying this complex are the shallow-dipping sedimentary and volcanic rocks of the Helikian Dubawnt Group. Exploration in this part of the District of Keewatin is mainly a search for uranium in the basement complex and the lower units of the Dubawnt Group.

TMT PROJECT
Pan Ocean Oil Ltd.
1050 Three Calgary Place,
355 Fourth Avenue Southwest,
Calgary, Alberta.

U
55 M/11, 12, 13; 65 P/10, 16
(63°37'N, 96°15'W)

REFERENCES

Donaldson (1965); Laporte (1974a, 1974b); Wright (1967).

PROPERTY

TM 251-255, 260-275, A43451-55, 60-75	55 M/11
BIS 1-20, A20331-50	TM 233-240, A43433-40 55 M/11, 12
AXE 4-9, A8495-500	FIRE 26-29, 36, A8460-64, 75 55 M/12
CAN 1, A21986	JET 1-6, 30-44, A8579-99 "
KEN 1-22, A8426-39, 41-48	LAURINE 1-21, T99490-70 "
LIZ 1-6, A8557-56; A20156-54, A20442	"
MAC 1-5, A8600-02, T99436-37	PEG 1-7, A8553-49, 54-55 "
PIC 1-15, A8534-48	RAT 1-23, A20117-27, 417-28 "
SOB 1-8, A20159-66	"
TM 1-28, 31-98, 132-227, A20201-28, 31-98, A43332-427	"
ZAP 1-12, T99440-51	
K 350-362, A80950-62	55 M/12, 13
K 231-349, A80831-62, 65-947	55 M/13
TM 101-131, A20351-81	65 P/10
K 363-394, A80963-94	65 P/16

LOCATION

The BIS, K 350-362, and TM 132-227, 251-255 and 260-275 claims group covers the area extending east from a major V-shaped widening of the Kazan River to one mile southwest of Bissett Lake. The K 231-362 claims are 9.5 miles east-northeast. The K 310-347 claims are 12 miles northeast and the K265-309 claims are 12 miles north of Kazan Falls. The west shore of the lake at the base of the falls is covered by claims TM 1-28. Claims TM 101-131 extend northwest from the shore of Thirty Mile Lake, 25 miles southwest of Kazan Falls. Claims K 363-394 cover the area north of the east end of a large unnamed lake, six miles east of the south end of Pitz Lake. The remaining claims form one large group covering both shores of the river above the falls and extending five miles northeast to the V-shaped widening of the river. The project is centered around 5, Figure 2.

HISTORY

A spectrometer survey flown in 1969 for the Dynamic Group of Companies lead to the staking of 790 claims which were acquired by the New Continental Oil Company of Canada Limited. Following ground geophysical and geological surveys of the anomalies in 1969 and 1970, all but 206 claims in the Kazan Falls area were allowed to lapse. Six holes totalling 2,274 feet tested showing 68-4 in 1970 (Laporte, 1974a). In 1971 and 1972 a detailed helicopter-borne magnetic survey covered the claim groups and

parts of Prospecting Permits 208 and 212. These permits and Prospecting Permit 213 had been acquired in 1970 and lapsed in 1973. Three holes, totalling 1,043 feet were drilled near Showing 68-4 and one 647 foot hole was drilled on the eastern shore of the Kazan River. Reconnaissance and detailed geochemical soil and water surveys covered most of the basement rocks in 1971 and 1972.

Pan Ocean Oil Ltd. acquired the property in February 1972. The BIS and TM 1-28, 31-98 and 101-131 were added to the company's holdings and 54 claims were allowed to lapse in late 1972. The remaining TM and K claims were staked in 1973 to cover anomalies detected during the geochemical survey. The KEN 14, LIZ 4-6, RAT 12, 13, 18 and 21, SOB 5, 7-8, TM 103-107, 112, 116-122 and 125-131 and ZAP 1 claims lapsed in early 1974.

DESCRIPTION

The TMT project explored part of the southern edge of a belt of Dubawnt Group sedimentary and volcanic rocks trending west-southwest from Baker Lake. The claims about Kazan Falls are underlain to the south, by gneisses of the basement complex and by the overlying Dubawnt Group Kazan Formation, arkosic sandstone, to the north. East and northwest of Kazan Falls, the Kazan Formation is overlain by trachyte, andesite, latite and rhyolite flows of the Christopher Island Formation. The claims northeast, east-northeast and north of the Falls are underlain by Kazan Formation sandstone. The claims north of Thirty Mile Lake are underlain by the basement complex gneisses while those east of Pitz Lake are completely covered but probably underlain by rocks of the Christopher Island Formation.

The uranium showings in the Kazan Falls area are both in basement fractures. Showing 68-4 (65°41'N, 95°46'W) (Laporte, 1974a, b) consists of pitchblende-containing north- to northeasterly-trending shear zones and tension fractures cutting a steeply-dipping assemblage of very fine-grained feldspar quartz-biotite paragneiss enclosing numerous bands of medium-grained amphibolite and hornblendite and lenses of metasomatic granite laced with quartz veinlets. Showing 68-4A (63°41'45"N, 95°43'W) (Laporte, 1974b) consists of uranium mineralization in north-trending fractures in feldspar-quartz-biotite paragneiss intruded by east-trending dykes of metadiabase. Occurrences of radioactive minerals were also discovered slightly to the north.

CURRENT WORK AND RESULTS

Geochemistry begun in 1971-72 on the basement complex was extended in 1973 to cover 350 square miles of predominantly Dubawnt Group rocks. Frost boils were sampled every 100' to 1500'. The coarse material (+250 mesh) was analysed at the base camp for total heavy metal content using cold extraction and then both sample cuts were sent to a commercial laboratory for hot extraction, fluormetric and atomic absorption analysis for their uranium, copper and lead content. The survey outlined linear anomalous zones trending northwest across the K 231-264, K 265-309 and K 310-349 claims. The K 364-394 claims cover an area where samples with a high uranium content were collected but there is no particular trend apparent in the distribution of these samples. The coarser sieve fraction generally contains more uranium whereas copper is more concentrated in the finer fraction.

A detailed ground magnetometer survey covered the BIS claims in 1973.

CAT
Sik Sik Golden Copper Mines Ltd.
205-606 Seventh Avenue Southwest
Calgary, Alberta.

55N⁶13; 56 C⁶4
(64°00'N, 93°33'W)

REFERENCE

Wright (1967)

PROPERTY

CAT 1-16, A39936-51

LOCATION

The claims extend east from the east shore of Tagiuk Lake north-east of Howell Islands and southwest of the Quioich River.

HISTORY

The CAT claims were staked in 1972.

DESCRIPTION

Gneiss, schist, amphibolite and granulite derived from sedimentary and volcanic rocks of Archean or Aphebian age underlie the claims. The gneissic layering trends east and dips 40° north.

CURRENT WORK AND RESULTS

Three holes totalling 341 feet were drilled on the claims in 1973. The holes intersected amphibolite with minor sulphides.

ACE
Aquitaine Company of Canada Limited
2000, 540 Fifth Avenue Southwest
Calgary, Alberta.

U
56 E/10
(65°40'N, 95°52'W)

REFERENCE

Wright (1967)

PROPERTY

ACE 1-11, T76289-99

LOCATION

The claims are centered 30 miles south of Laughland Lake and 28 miles east of the Quoich River,

HISTORY

The property was acquired by the Aquitaine Company of Canada Ltd. in September 1973 following the discovery of radioactive minerals during the investigation of a gossan zone reported by Wright (1967).

DESCRIPTION

Granitic gneiss enclosing small remnants of Hurwitz Group rusty siliceous metasedimentary rock, schistose and massive quartzite, crystalline limestone and magnetic banded iron-formation underlie the claims. A small gabbro plug outcrops at the south boundary of the claims. Gneissic layering and bedding strike east-northeast and dip 25° to 30° to the north.

CURRENT WORK AND RESULTS

Mapping and prospecting of the claims located pitchblende and yellow secondary uranium oxides as small scattered and sporadic patches in a narrow skarn zone in the main crystalline limestone outcrop. Weak radio-activity was recorded in the schistose quartzite south of the limestone.

NORTHERN DISTRICT OF KEEWATIN

Felsic to mafic gneisses and granitic intrusions of Archean to late Aphebian age underlie most of the northern District of Keewatin. In 1973 mineral exploration was essentially restricted to the search for the source of nickel-copper bearing noritic boulders in the Perry River area.

JA, PRN
Perry River Nickel Mines Ltd.
5, 932 - 12th Avenue, S.W.
Calgary, Alberta.

Ni, Cu
 $66^{\circ}M/9$
 $67^{\circ}41'N, 102^{\circ}12'W$

REFERENCES

Fraser (1964); Heywood (1961); Laporte (1974a).

PROPERTY

JA 1-40, A72581-620
PRN 1-41, A72261-30

LOCATION

The PRN claims cover the south third of Winter Island and the northwest corner of the larger "Lee" Island to the south. The JA claims extend from the Perry River east to north of a major bend in the Gavin River, near location 6, Figure 2, page 5.

HISTORY

The claims were staked, in 1973, to cover a boulder train of nickel-copper mineralization and weak anomalies detected during an airborne survey flown for Giant Yellowknife Mines Ltd. in 1971 (Laporte, 1974b).

DESCRIPTION

Outcrops of black- to buff-weathering gneisses are sparse on the claims. The gneissic layering trends east to east-northeast and dips shallowly to the south. North-northwest-trending norite and diabase dykes intrude the gneisses. The only dyke wholly exposed across its width is 175 to 200 feet wide and can be traced for one mile beyond the PRN group boundary.

Chalcopyrite, pyrrhotite, violarite, pentlandite, magnetite and pyrite occur in norite float in a two mile boulder train and locally in exposures of the norite dykes. The chalcopyrite occurs evenly distributed through the norite boulders in fine stringers, fracture fillings and small patches while the pyrrhotite is commonly found in more massive pods. Twenty-eight samples from mineralized boulders in that part of the boulder train within the claims averaged 0.5% Cu and 1.25% Ni. Grab samples from the norite dykes assayed 0.13%, 0.08% and 0.16% Ni and 0.07%, 0.18% and 0.22% Cu.

CURRENT WORK AND RESULTS

Prospecting and geological mapping covered the PRN group in 1973 and EM, IP, and magnetic surveys tested weak anomalies outlined by airborne surveys flown for Giant Yellowknife Mines Ltd. in 1971 (Laporte, 1974b). No conductors were detected in the bedrock but the magnetic survey delineated the north south dykes and showed they were offset by a fault. Two diabase dykes were delineated as well. The magnetic expression of one of the norite dykes intersects the down-ice projection of the boulder train.

MAG, OAT, OS, ROSS, N
Canada Southern Petroleum Limited (60%)
940 - Eighth Avenue Southwest
Calgary, Alberta.

Nemco Exploration Limited (40%)
534 - 789 W. Pender Street,
Vancouver, British Columbia.

Cu, Ni
66°N/5
67°27'N, 101°50'N

REFERENCES

Heywood (1961); Laporte (1974b)

PROPERTY

MAG 7-10, 15-22, 29-32, A36227-52; N8-12, A36108-52
OAT 5-8, 18-19, 30-31, A36297-323; OS 2-11, 14-23, 26-35, A36186-219
ROSS 11-14, 23-26, 35-40, 45-52, 57-65, 68-72, A36267-364

LOCATION

The claims group is centered six miles south-southwest of Discovery Lake and four miles east of Perry River, near location 6, Figure 2.

HISTORY

The claims were staked for the Perry River Syndicate in November, 1971 (Laporte, 1974b). The 95 MAG, N, OAT, OS and ROSS claims were acquired by Nemco Explorations Limited in August 1972. All but N 10-12 and OS 3-6, 8-11, 14-17, 21-23, 26-28 and 34-35 lapsed in early 1974.

DESCRIPTION

Felsic to mafic gneisses underlie most of the claims and granulite and gabbros occur locally. Foliation in the gneisses strikes northeast and dips steeply to vertically.

CURRENT WORK AND RESULTS

Magnetometer surveys over the southeast part of the claim group in late 1972, and the northwest part in 1973 outlined three magnetic anomalies thought to be caused by mafic intrusions. A 1-inch to 100 foot geological map of the claims was prepared in 1973.

Several gossans in the central part of the claims appear to be unrelated to the nickel-copper mineralization. The main chalcopyrite-pyrite showing occurs to the north on the OS group.

OTOK
Perry River Nickel Mines Ltd.
5, 932 - 12th Avenue, S.W.
Calgary, Alberta. T2R 0J4

Ni, Cu
66 N/5
67°24'30"N, 101°34'30"W

Rio Alto Exploration Ltd.
Suite 205 - 736 8th Ave. S.W.
Calgary, Alberta.

Savanna Creek Gas & Oil Ltd.,
5, 932 - 12th Avenue, S.W.,
Calgary, Alberta.

REFERENCES

Fraser (1964); Heywood (1961); Laporte (1974b)

PROPERTY

OTOK 1-35, A18561-581; A34882-895

LOCATION

The OTOK claims are centered 4.5 miles east of the Perry River and 10 miles south of Discovery Lake.

HISTORY

The Otok showing was discovered and staked in July 1971 by D.G. Thomas and F. Ipakphak. Geophysical surveys, trenching, geological mapping and 492 feet of diamond drilling tested the property and the showing, on OTOK 18, in 1971 and 1972 (Laporte, 1974b).

DESCRIPTION

The claims are underlain by quartz-feldspar-pyroxene granulite, pyroxenite, gabbros granite gneiss and quartz diorite. Gneissic layering has a highly variable attitude on the claims and a series of north-northwest faults displace the rocks.

The Otok showing is in a pink granite gneiss, probably a microcline rich granulite. The mineralization trends north-northwest and dips 60° west to vertical. It is folded at the south end and folded or faulted at the north end. The central limb of the Z-shaped mineralized zone is 1,800 feet long and the west limb is at least 800 feet long. Pyrrhotite, the main sulphide in places makes up 30% of the rock. Chalcopyrite magnetite and pyrite occur in lesser amounts.

CURRENT WORK AND RESULTS

Drilling on the Otok showing in 1973 totalled 1,242 feet. Four new holes were drilled and one started in 1972 was extended from 292 feet to 420 feet. The best intersections were obtained in the more intensely brecciated northern part of the showing where a 60 to 80 foot thick zone extending at least 400 feet into the nose of the fold, north of the showing, grades approximately 0.45% Cu and 0.15% Ni.

MELVILLE PENINSULA

Melville Peninsula is essentially a northeastern extension of the Precambrian terrain underlying the northern Keewatin District immediately to the southwest. It is generally more rugged and lakes are less common so that access is somewhat more difficult than to the south.

Exploration on the peninsula has concentrated in the past on fold belts striking northeasterly into the Foxe Basin. Extensive iron formations and successions of mafic volcanic rocks have been outlined. Little activity took place in 1973 and only one property is discussed.

NORTH MELVILLE PENINSULA PROJECT
Aquitaine Company of Canada Limited
2000, 540 - Fifth Avenue Southwest
Calgary, Alberta.

Cu, Ni
47 A/13, 14
(68°52'30"N, 83°30'W)

REFERENCES

Heywood (1967), Laporte (1974a, 1974b)

PROPERTY

Prospecting Permit 301	
BIL 1-12, T76612-80; T76340-43	47 A/13
WAY 1-11, T76601-11	47 A/14

LOCATION

Prospecting Permit 301 is centered 30 miles northwest of Hall Lake and 30 miles east of Garry Bay on the west shore of Melville Peninsula. The BIL and WAY claims cover parts of the eastern border of the permit. The location of this project is approximately at 7, Figure 2, page 5.

HISTORY

The BIL 1-9 and WAY 1-11 claims staked in July 1971, were explored by ground EM and magnetic surveys and by trenching in 1972, the year in which the BIL 10-12 claims were recorded. Prospecting Permit 301 was granted in 1973 and the WAY claims lapsed later that year.

DESCRIPTION

The claim and permit areas are underlain mainly by biotite-rich paragneiss. A 1,800 by 900-foot basic intrusive outcrops on the BIL claims.

CURRENT WORK AND RESULTS

INPUT EM and magnetic surveys were flown over 740 line-miles of the prospecting permit area in 1973. Ground EM surveys and 2,000 feet of diamond drilling on a portion of the basic intrusive on the BIL claims outlined a concentration of copper- and nickel-bearing sulphides.

EXPLORATION IN THE MACKENZIE DISTRICT

During 1973, the Mackenzie District Geologist monitored exploration activity in the Arctic Islands, on Northern Baffin Island, and in five distinctive regions of the "District of Mackenzie". These regions, Figure 1, comprise the Pine Point portion of the Interior Plains, that portion of the Churchill Structural Province lying west of 104° longitude, the Bear and Slave Structural Provinces and the East Arm Subprovince.

BAFFIN ISLAND

Baffin Island is an extensive complex of Precambrian gneisses and granites locally overlain by flat lying unmetamorphosed shelf type Paleozoic and late Proterozoic sedimentary rocks. Proterozoic fold belts recognized on the Melville Peninsula reappear on the Island and some of these contain extensive iron formations similar to those on the peninsula. There was relatively little exploration during 1973 and it was concentrated in the northwest part of the Island where lead-zinc deposits are found in flat lying Helikian carbonate formations overlie the basement complex.

Access to localities can be difficult because the terrain is mountainous, lakes are less abundant than in other parts of the Canadian Shield and because flying weather during much of the snow free period may be poor. Thus, particularly in the southeastern and eastern parts of the Island, helicopter support is necessary.

STRATHCONA PROJECT
Global Arctic Islands Ltd.
740 Three Calgary Place
355 Fourth Avenue, S.W.
Calgary, Alberta.

Pb, Zn, Cu
48 A/2
(72°18'N, 81°30'W)

REFERENCES

Blackadar (1965, 1970); Blackadar *et al.* (1968a); Trettin (1969)

PROPERTY

SE 1-77

LOCATION

The claims are at the head of Tremblay Sound. They partially cover a lake and an adjacent plateau. Access to the claims is facilitated by helicopter.

HISTORY

Reconnaissance prospecting, and geochemical silt sampling for King Resources Company Ltd., in 1969 and prospecting, silt sampling and reconnaissance geological mapping in 1970 under the direction of Trigg, Woollett and Associates discovered numerous galena occurrences within upper Arctic Bay Formation dolostone. Most of these are on the north side of a locally prominent mesa. Minor sphalerite, malachite, chalcocite and bornite were also discovered.

The SE claims were recorded in May, 1972 and had lapsed by January, 1976.

DESCRIPTION

A mesa ranging from 1250 to about 1850 feet above sea level extends northwest through the claims. The mesa is formed by Society Cliffs Formation dolostone. A central depression; possibly a paleokarst feature is filled with talus of Victor Bay Formation, black fissile shale and grey fine grained dolomite.

The lower ground is underlain by shale and dolostone of the Arctic Bay Formation. (Blackadar *et al.*, 1968a). Four facies of the Society Cliffs Formation recognized over the claim group comprise massive dololutite, flat pebble conglomeratic dolostone, interbedded dololutite and laminated algal dolomite.

CURRENT WORK AND RESULTS

Forty-three silt samples were collected from drainage channels on the northern side of the mesa and around the central depression on the mesa. Two zinc anomalies were located near the claim boundary northeast of the mesa, in ground underlain by the Arctic Bay Formation.

Reconnaissance VLF surveys of the central depression, suggested five weak conductors in the Victor Bay Formation.

STRATHCONA PROJECT
Global Arctic Islands Ltd.
740 Three Calgary Place
355 Fourth Avenue S.W.
Calgary, Alberta. T2P 0J1

Zn, Pb, Cu
48 A/6, 48 A/7
(72°28'N, 81°57'W)

REFERENCES

Blackadar (1965, 1970); Blackadar *et al.*, (1968a); Trettin (1969).

PROPERTY

G0 1-119

LOCATION

The G0 claims lie in the northeast corner of NTS 48 A/6, and the northwest corner of NTS 48 A/7.

HISTORY

Topographic surveying, geological mapping, geochemical and geophysical surveys, during 1970, for King Resources Company Ltd. by Trigg, Woollett and Associates Ltd. and Geowest Services Ltd., located several lead, zinc and copper occurrences and EM anomalies. Diamond drilling of mineralized areas and EM anomalies, failed to detect significant mineralization.

In May 1972, claims G0 1-119 were staked to cover favourable geology with associated unchecked geochemical anomalies. By January, 1976 the claims had lapsed.

DESCRIPTION

Most of the claims are underlain by Society Cliffs Formation dolomite. Black shale of the overlying Victor Bay Formation is less widespread and the stratigraphically lower Adams Sound Formation is found along the margin of the claim block, northeast of the northwest striking Victoria Fault.

CURRENT WORK AND RESULTS

One hundred and sixty-nine silt samples were collected about one quarter mile apart along water courses, on and adjacent to the claims and in an area extending about six miles to the southeast of the claim block. Four sedimentary facies of the Society Cliffs Formation were recognized and indications of paleokarsting were reported.

BM, CC, JO, KR, TR
Global Arctic Islands Ltd.
740 Three Calgary Place,
355 Fourth Avenue S.W.
Calgary, Alberta. T2P 0J1

Pb, Zn
48 A/13, B/16

REFERENCES

Blackadar (1965, 1970); Blackadar *et al.* (1968a); Laporte (1974a); Lemon and Blackadar (1963); Trettin (1965, 1969)

PROPERTY

BM 1-55, CC 1-106, JO 1-100, KR 1-23, TR 1-417

LOCATION

The claims lie between Strathcona and Adams Sounds, Baffin Island. A service camp is situated two to three miles south of the claim block, just north of the Adams River at 72°49'N, 83°22'W. An airstrip adjacent to the camp is adequate for large-wheeled aircraft.

HISTORY

In 1969, Prospecting Permits covering 48 A/7, /10, /11, /12, /13 and 48 B/16 were granted to King Resources Company. Extensive geophysical and geochemical orientation surveys by Kenting Exploration Services Ltd., Huntce Division, showed that EM 16, VLEM at 5,000 Hz, stream sediment and soil geochemistry were promising exploration tools in the area. Cold extractible zinc (CxZn) appeared to be a useful indicator in reconnaissance.

Prospecting, detailed and reconnaissance geological mapping including a stratigraphic study, airborne and ground geophysical surveys, and reconnaissance and detailed geochemical surveys, diamond drilling and engineering studies were undertaken.

The permits expired in 1972, whereupon Global Arctic Islands Ltd. staked the TR, KR, JO, BM, CC claims and exploration continued on these groups under the supervision of Trigg, Woollett and Associates. The GO claims 48 A/6, 48 A/7 and the SE claims 48 A/4 are the subject of separate reports.

DESCRIPTION

Most of the property is underlain by Helikian Society Cliffs Formation dolostone which is usually stromatolitic, or is laminated exhibits cryptalgal structures. Stromatolite mounds are elongated on an azimuth of 060° to 110°. The Arctic Bay Formation, normally composed of calcareous shales and dolostone, underlies, and the Victor Bay Formation overlies the Society Cliffs Formation. A small area on the northeast of the claim block is underlain by the Strathcona Sound Formation.

Both Strathcona Sound and Victor Bay Formations on the claims differ from the type section. The Victor Bay has a great thickness of calcilutites. The Strathcona Sound Formation has a basal conglomerate with a variety of pebbles, including Aphebian granitic and gneissic pebbles overlain by reddish sandstone interbedded with conglomerate containing brightly coloured pebbles. At its top, there is a reddish sandstone. Close to the contact with the overlying Victor Bay Formation, the Society Cliffs Formation dolostone contains abundant black chert nodules which are rare to absent elsewhere in the Formation.

The boundary between the Arctic Bay Formation and the Society Cliffs Formation may be a disconformity, a regional change in the character of the Arctic Bay Formation being evident at the contact. Blackadar, *et al.* (1968), concluded that the Victor Bay Formation conformably overlies the Society Cliffs Formation; King Resources work suggests a period of uplift during which karst developed prior to deposition of the Victor Bay Formation.

The upper Proterozoic rocks lie in a northwest striking graben. Dips normally do not exceed 10° and where steeper may indicate local structural features such as faults, or karsting with associated collapse structures.

Northwesterly and northerly to north-northwesterly striking Hadrynian gabbroic dykes penetrate the pre-Palaeozoic rocks. These dykes are particularly prominent in the area underlain by Society Cliffs dolostone between Adams Sound and Strathcona Sound and extending southeast through Tremblay Sound. They form topographic lows in the Society Cliffs dolomite, and highs in the shales of the Victor Bay and Arctic Bay Formation.

Faulting occurred before and after the intrusion of the gabbro dykes and also following deposition of nearby Palaeozoic rocks.

Solution channels, in breccia zones are locally mineralized with banded sphalerite-pyrite-galena-dolomite or with massive pyrite. The pyrite can give rise to minor gossans. Breccia zones and collapsed solution channels produce small topographic lows.

There is no genetic relation other than a possible structural control between the dykes and the lead-zinc mineralization. Minor disseminations of chalcopyrite occurring independently of local lithology near the gabbro dykes are probably genetically related to these dykes.

CURRENT WORK AND RESULTS

In 1973, follow up to previous reconnaissance and regional exploration was concentrated on a 9,600 foot north-south by 10,000 foot east-west grid in the eastern part of the claim block. Hawker and Hassard Creeks flow northwest through the grid. Except for small areas of Victor Bay Formation in the southwest and northeast parts, the grid is underlain by Society Cliffs Formation dolostone.

The grid was mapped on a scale of 1 inch to 400 feet with detailed mapping on selected areas.

VLF surveying, with an EM 16 unit covered the grid and a limited amount of VLEM is believed to have been carried out. IP included orientation surveys over known showings.

Reconnaissance silt samples from adjoining areas were assayed for zinc in a field laboratory.

Silt samples from Hawker and Hassard Creeks had established two anomalies of disproportionate magnitude to the grade of mineralization discovered.

Some showings were pitted and trenched. A trench on the SH25 showing, just south of Hawker Creek, exposed banded sphalerite, pyrite, and dolomite with minor galena, apparently occupying a solution channel in a breccia zone. A nearby trench contains massive pyrite. Hawker Creek probably follows a diabase dyke at this point. Showings SH22 to the northwest, near the Hawker Creek camp, and SH26 to the south are composed of massive pyrite.

In August 1973, when the property was visited, a 17-man helicopter supported crew was working out of the Adams River and Hawker Creek camps.

STRATHCONA SOUND DEPOSIT

Zn, Pb, Ag

48 6/1

(73°02'N, 84°28'W)

under option to:

MINERAL RESOURCES INTERNATIONAL LIMITED

100 - One Calgary Place,

330 - 5th Avenue S.W.,

Calgary, Alberta.

REFERENCES

Laporte (1974a, 1974b); Lemon and Blackadar (1963);

Blackadar *et al.*, (1968d)

PROPERTY

Mineral Leases 2274, 75, 81; 2451, 52, 53.

GULL 1-35, RAVEN 1-7, OWL 1-7, GOOSE 1-2, N11081-248, N14664-73;

DUCK 1-6, LION 1-22, FISH 1-12, N27591-8740.

LOCATION

The 20 square mile property lies on the south shore of Strathcona Sound extending west from Kuhulu Lake.

HISTORY

Lead and zinc sulphides were first noted on the south shore of Strathcona Sound by A. English, a prospector who accompanied Captain J.E. Bernier to northern Baffin Island in 1910-11. The showings were trenced by J.F. Tibbitt and J.W. McInnes in 1937 and two claims were staked. These lapsed in 1938.

Texas Gulf Inc., entered the area after Lemon and Blackadar (1963) reported massive pyrite showings and 37 claims were staked in 1957 over the showings. Detailed geological and geophysical surveys, trenching and additional claim staking followed in 1958. Diamond drilling, begun in 1961 totalled 90,000 feet by 1968. An adit and four cross cuts, in all 2,000 feet of openings, were driven into the east end of the ore body in 1969 and a 50 ton bulk sample was shipped for metallurgical testing.

In 1972, Mineral Resources International added 10,000 feet of diamond drilling and mined a 10 ton bulk sample from the west end of the orebody. The GULL claims were added to the property in 1972.

DESCRIPTION

Grey Society Cliffs Formation dolostone is the bedrock under most of the claim group. The overlying Victor Bay Formation shale with minor limestone, mudstone and conglomerate underlies a small area in the north-west of the claim group. Gallery Formation quartzose sandstone, underlie the southwestern corner of the group. These are units Hsc, Hvb and EOga respectively of Blackadar *et al.* (1968d).

The flat-lying S-shaped orebody is 200 to 400 feet wide, 30 to 60 feet thick and two miles long. The ore comprises nearly massive pyrite

with varying amounts of sphalerite, galena and minor marcasite, and about 5% disseminated calcite. Selenite and recrystallized dolomite occur in fractures and as breccia matrix in or near the ore. Several mineralized pipes, veins or "keels" extend down from the orebody.

CURRENT WORK AND RESULTS

A production feasibility study begun by Watts, Griffis and McQuat Limited in 1972 completed in September 1973 indicated 6,970,000 tons of proven and probably ore in the main body and suggested that additional ore may be found under it. The study concluded development of the main orebody is economically feasible and recommended production at a rate of 2,500 tons per day.

Planning and preliminary construction of the infrastructure necessary for mining operations in this remote location, which includes an airport capable of handling jet aircraft, a town, a dock and connecting roads began in 1973.

Geophysical surveys during the summer of 1973 delineated a number of conductors totalling 33,000 feet in strike length adjacent to and on strike with the main orebody.

ARCTIC ISLANDS

Exploration in the Arctic Islands has mainly been a search for lead-zinc deposits within carbonate formations in and near the Cornwallis Fold Belt which contains the large and rich Polaris deposit on Little Cornwallis Island. Interest in the diamond potential of Kimberlite pipes and dykes that intrude the Paleozoic rocks to the south and west of the Cornwallis Fold Belt was just beginning in 1973.

Most of the properties described here, Figure 5, are within 150 miles of Resolute on Cornwallis Island, the supply centre and only community in this remote area.

Three jet services-as of 1976-link Resolute with supply centres in eastern, central, and western parts of southern Canada. Most parts of the region are accessible by fixed wing aircraft operating with extra large tires so that they can land directly on smooth parts of the tundra. Government regulations require twin engined aircraft for operations crossing wide stretches of open water. This together with the extremely short snow free period and poor flying conditions during the warmer months can seriously restrict aircraft availability and long delays may be experienced if a contract machine is not procured.

ROOK, BRAN, ALL, MEG
Cominco Ltd.
200 Granville Square
Vancouver, B.C.

Pb, Zn
58 F/12, 14, G/4

REFERENCES

Laporte (1974a, 1974b); Thorsteinsson and Kerr (1968)

PROPERTY

ALL 1-15, 18-23, 26-29	F/14
MEG 1	F/12
Prospecting Permit 225	G/4
ROOK 1-121	
BRAN 1-15	

LOCATION

Prospecting Permit 225 and the ROOK group are on Cornwallis Island, 48 miles northerly from Resolute.

The BRAN and ALL groups are on Cornwallis Island, 16 miles north-east of Resolute and the MEG claims are on Griffith Island, 16 miles south-easterly of Resolute.

The claim blocks are shown on Figure 5, Nos. 26, 22, 23 and 25 respectively.

HISTORY

Prospecting Permit 225 was obtained in 1971, and explored in 1973.

The area was prospected by Bankeno Mines Ltd. in 1964. Cominco Limited did stream sediment geochemistry in 1965, reconnaissance mapping, geochemical and mineral prospecting in 1971, and detailed mapping and gravity surveys in 1972, (Laporte 1974a, 1974b).

No work has been reported on the claim groups which were staked in 1973.

DESCRIPTION

Cornwallis Island, a part of the Cornwallis Fold Belt, is underlain by Paleozoic, dominantly carbonate successions.

Permit 225 covers part of the westerly dipping limb of a large anticline which exposes Bay Fiord Formation evaporite, carbonate and minor shale, Thumb Mountain Formation carbonate, Irene Bay Formation shale and limestone and Cape Phillips Formation carbonates, with chert units, (Thorsteinsson and Kerr, 1968).

CURRENT WORK AND RESULTS

A large part of the area, from Rookery Creek, north to the tip of Marshall Peninsula was mapped at a scale of 1000 feet to the inch. Gravity surveys were extended northerly from the 1972 grid to cover the Rookery Creek lead-zinc showing.

Extensive areas of dolomitized Thumb Mountain Formation on Marshall Peninsula and the rest of the permit excepting the area of the ROKK claims, have been relinquished.

MUSKOX, WALRUS
Cominco Ltd.
200 Granville Square
Vancouver, B.C.

Pb, Zn
58 F/14, G/11
75°40'N, 94°45'W

Bankeno Mines Ltd.,
40 University Avenue,
Toronto, Ontario

Arvik Mines Ltd.,
P.O. Box 1979,
Yellowknife, N.W.T.

REFERENCES

Kerr (1972); Laporte (1974a, 1974b); Thorpe (1966); Thorsteinsson (1958); Thorsteinsson and Kerr (1968)

PROPERTY

MUSKOX N28019-036	58 F/14
WALRUS N32718-73	58 G/11
PROSPECTING PERMIT 256	58 F/14

LOCATION

The MUSKOX claims lie approximately 18 miles due north of Resolute on Cornwallis Island. The WALRUS claims lie 4 miles south of Stuart Bay, on the north coast of Cornwallis Island approximately 60 miles north of Resolute. These groups are shown on Figure 5 (Nos. 21 and 20).

HISTORY

The MUSKOX claims were staked on a showing near the Taylor River, following prospecting in 1964. In 1965, the MUSKOX claims were mapped, soil sampled and test pitted. The WALRUS claims were staked following a reconnaissance stream sediment survey. Prospecting permit 256 was issued to Cominco in 1971 and expired in 1974. The permit was explored in 1972 (Laporte, 1974b) but no work was done in 1973.

The WALRUS claims were explored in 1966, by soil sampling, IP surveying, geological mapping and 376 feet of drilling on a 600 to 1200 foot long IP anomaly.

DESCRIPTION

The MUSKOX claims are mainly underlain by the Middle Ordovician Thumb Mountain Formation, limestone and dolostones and lie 4 miles east of a sharp bend in the Taylor River Graben, where it adjoins the Ward River Graben to the west. The south part of the claim group may be underlain by the Allen Bay Formation.

The southwestern part of the WALRUS claims are underlain by the Thumb Mountain Formation which is separated from the Cape Phillips Formation underlying the northeastern part of the claims by a northwesterly striking unit of recessive Irene Bay Formation, shale and limestone.

CURRENT WORK AND RESULTS

During 1973, the MUSKOX and WALRUS claims were surveyed preparatory to leasing.

CORNWALLIS ISLAND PROJECT	Pb, Zn
Canadian Superior Exploration Ltd.	58 F/14, G/2, G/3, G/4, G/6
2201 - 1177 West Hastings Street	68 H/1
Vancouver, B.C.	75°15'N, 94°30'W

REFERENCES

Thorsteinsson (1958); Thorsteinsson and Kerr (1968).

PROPERTY

Prospecting Permit 289 -	58 G/2
Prospecting Permit 290 -	G/3
Prospecting Permit 291 -	G/4
Prospecting Permit 292 -	G/6
Prospecting Permit 293 -	68 H/1
BAC 71-110	58 F/14

LOCATION

Prospecting Permits 289 to 293 and BAC claims are located north of Resolute on Cornwallis Island. Permits 289, 290, 291 and 293 extend easterly across the islands. The 40 BAC claims lie 20 miles north-northeast of Resolute, along a tributary of the Allen River. Figure 5, (Pages 48-49) shows the locations of these properties.

HISTORY

The Prospecting Permits were granted in 1973. Cominco previously held areas 58 G/3 and 58 G/6 under Permits 54 and 53 respectively, granted in 1966, and relinquished in 1967. Area 58 G/6 was also held under Permit 220 by Bayou Petroleum from 1970 to 1973. BAC 71-110 were staked in July 1973, adjoining the area retained under Permit 256.

DESCRIPTION

The area involved is underlain by gently to moderately folded and extensively faulted Ordovician to Devonian sediments including carbonates of the Thumb Mountain Formation (Thorsteinsson and Kerr, 1968) which hosts the important Arvik and Eclipse deposits on Little Cornwallis Island, showings at Stuart River 58 G/11, Rookéry Creek 58 G/5, Taylor River 58 G/14 and Allen Branch 58 F/14, on Cornwallis Island, (Figure 5, locs. A-D).

The Thumb Mountain Formation comprises about 1700 feet of generally fine-grained, pale to dark grey, fossiliferous limestones, and dolostones.

Within permit areas 289, 290 and 291, the formation outcrops on the eastern and western flanks of the dominant structure on the island, the Centre Anticline (Thorsteinsson, 1958) whose flanks are complicated by numerous faults, largely trending northerly, and many graben structures, including the prominent Taylor River Graben (Thorsteinsson and Kerr, 1968). To the north the anticline bifurcates. An eastern fold trends northerly across permit area 292, exposing Thumb Mountain Formation carbonates along the crests of the De Haven/Caribou anticlines (*ibid*, 1968). Faulting along the eastern margins of these two folds is multiple and complex. The western limbs dip beneath a largely unmapped cover of Devonian sediments unconformably overlying Ordovician Thumb Mountain Formation carbonate.

Exposure of Thumb Mountain strata in permit area 293 is limited to a narrow, faulted strip along the northern six miles of the north trending Stanley Head Anticline (*ibid*, 1968).

The BAC claims cover Thumb Mountain strata on the southwestern limb of the Bacon Anticline (*ibid*, 1968). Lead-zinc occurs in the Thumb Mountain dolostones immediately west of the claim block.

CURRENT WORK AND RESULTS

Approximately 100 square miles underlain by the Thumb Mountain and associated formations was geologically mapped at 1:60,000 scale. More than 1800 soil samples were taken from selected areas and 540 stream silt samples were collected establishing a sample density of about 1.7 per square mile. All were analyzed for Pb, Zn and Cu. Approximately 20 line miles of gravity surveying tested low-order soil geochemical anomalies in permit area 291.

BATHURST ISLAND AND GRINNELL PENINSULA PROJECT
Cominco Ltd.,
200 Granville Square,
Vancouver, B.C.

Zn, Pb, Cu
59^B, 69A, B, H
95°00'W, 76°95'N

REFERENCES

Fortier *et al.* (1963); Kerr and Morrow (1972); Kerr, Morrow and Savigny (1973); Laporte (1974b).

PROPERTY

Prospecting Permits 274, 275, 276, 278	59 B/3, B/4, B/6, B/13
Prospecting Permits 278, 279, 280, 281	69 A/9, A/10, A/15, A/16
HECLA 1-39, A41701-735; UNSUNG 1-25, A28871-900	59 B/5
TERROR 1-8, A40121-128	59 B/7
EREBUS 1-20, A39131-150	59 B/11, 14
BEARD 1-80, A41401-480	59 B/12
APOLLO 1-29, A29947-973	68 H/11
TUKTO 1-23, A28131-153	68 H/11, 14
AQUARIUS 1-37, A29929-963; GRINCH 1-4, A40197-200	69 A/2
AGPAN 1-62, A28801-862	69 A/2, 3
IDJUK 1-14, A28116-129	69 A/3
ORGAN 1-13, A28154-166	69 A/7

LOCATION

The 227 BEARD, EREBUS, TERROR, UNSUNG and HECLA claims and the 8 prospecting permits are on the Grinnell Peninsula and immediately surrounding islands about 150 miles north of Resolute, (Figure 5, Nos. 15, 16, 17, 18 and 19 respectively). The TUKTO, APOLLO, AQUARIUS, GRINCH, IDJUK, AGPAN and ORGAN claims lie along the north half of the east coast of Bathurst Island, (Figure 5, Nos. 8, 9, 10, 11, 12, 13 and 14 respectively).

HISTORY

Prospecting of the Grinnell Peninsula in 1971 followed discovery of a major lead-zinc deposit on Little Cornwallis Island to the south and that year 18 AQUARIUS and 18 APOLLO claims were staked. The 8 prospecting permits were acquired in 1972 and the bulk of the claims staked that summer. (Laporte, 1974b).

DESCRIPTION

The Grinnell Peninsula is underlain by a thick sequence of Paleozoic sedimentary rocks, which have been deformed into a series of north-trending folds with linear grabens bounded by normal and transcurrent faults. Five episodes of deformation, between Devonian and Cenozoic time, affected the sedimentary succession. Long and widespread stability prior to the

initial deformation was characterized by deposition of platform carbonates, evaporites and minor shales.

Exploration targets are limestone and dolostone of the Thumb Mountain Formation, the middle member of the Upper Ordovician Cornwallis Group. Limestone, shale and anhydrite of the Bay Fiord Formation underlie the Thumb Mountain Formation, and Irene Bay Formation limestone and shale overlie it. Reconnaissance mapping has found Thumb Mountain Formation outcropping along the western shore of the Grinnell Peninsula, in the central, south-central and southeastern parts of the peninsula, on Dundas Island to the south and on Bathurst Island to the west (Laporte, 1974).

CURRENT WORK AND RESULTS

In 1973, detailed mapping and geophysics covered areas identified by the 1972 reconnaissance program. No new showings were located.

The UNSUNG claims lapsed in 1974. The TERROR group lapsed in January 1975.

VENUS, TRU
Cominco Ltd.,
200 Granville Square,
Vancouver, B.C.

Pb, Zn
68 H/2, 8
75°18'N, 97°10'W

REFERENCE

Laporte (1974b)

PROPERTY

VENUS 1-179; TRU 1-50.

LOCATION

The VENUS group entirely covers Truro Island which lies about 8 miles southwest of the Polaris property on Little Cornwallis Island, (Figure 5, No. 1). The TRU group lies at the north end of the VENUS group and thus are all underwater claims.

HISTORY

The 179 VENUS claims were staked in 1971 to cover presumed favourable sections of Thumb Mountain Formation carbonates.

DESCRIPTION

The geology of the property is similar to that of the Polaris property (above page 51).

Laporte (1974b, p-69) reports the previous work on the VENUS claims as having -

"outlined a low grade galena-sphalerite showing (75°10'30"N, 97°98'30"W). In 1972, the island was mapped and the showing area was explored by means of geochemical and geophysical surveys and the drilling of 10 short holes totalling 917 feet."

CURRENT WORK AND RESULTS

During 1973, 33.5 line miles of gravity survey covered portions of the VENUS group not covered by the 1972 survey. Readings were taken at 200 foot intervals on lines 800 and 400 feet apart.

Rough topography on the island and steep sea bottom gradients made corrections difficult and interpretation tentative. It was concluded that holes drilled previously to test an anomaly were too shallow to define the source.

COR
Kermac Investments Ltd.
908 - 40 University Avenue,
Toronto, Ontario.

Pb, Zn
68 H/8

REFERENCES

Kerr (1972, 1975); Laporte (1974a, 1974b); Thorsteinsson (1958); Thorsteinsson and Kerr (1968)

PROPERTY

COR 1-145, A51501-609; A51960-995

LOCATION

The COR group is on the south side of Little Cornwallis Island between Cominco's POL group, the eastern part of the POLARIS holdings and the LEE group, No. 3, Figure 5.

HISTORY

The COR claims were located in mid-1973, for Kermac Investments Limited.

DESCRIPTION

As these claims are immediately adjacent to the Arvik Mines Ltd. holdings, (above) it is assumed that the description of that company's properties will apply reasonably well to the COR group.



Northward continuation of Figure 5 on facing page

Claim Groups and Geology
in the Little Cornwallis District of the Central Arctic Islands

Index Nos.	Property and Claim Names	Index Nos.	Property and Claim Names	Index Nos.	Property and Claim Names
1	VENUS, TRU	6	MIL	17	TERROR
2	Polaris Property	7	LYNN	18	USUNG
	POLARIS, TAG, GAR,	8	TUKTO	19	HECLA
	RID, WEB, MARY,	9	APOLLO	20	WALRUS
	VAT, TWIN, POL	10	AQUARIS	21	BAC*
3	COR	11	GRINCH	22	BRAN
4	LEE	12	IDJUK	23	ALL
5	Eclipse Property	13	AGPAN	24	MUSKOX
	WAL, TUNDRA	14	ORGAN	25	MEG
	ECLIPSE, and	15	BEARD	26	ROOK
	49 Un-named claims	16	EREBUS		

*All claims are owned by Arvik Mines and/or Cominco Ltd. except for the BAC group of Canadian Superior, and the COR group of Kermac Investments Ltd. The COR group was acquired by Cominco in 1974.

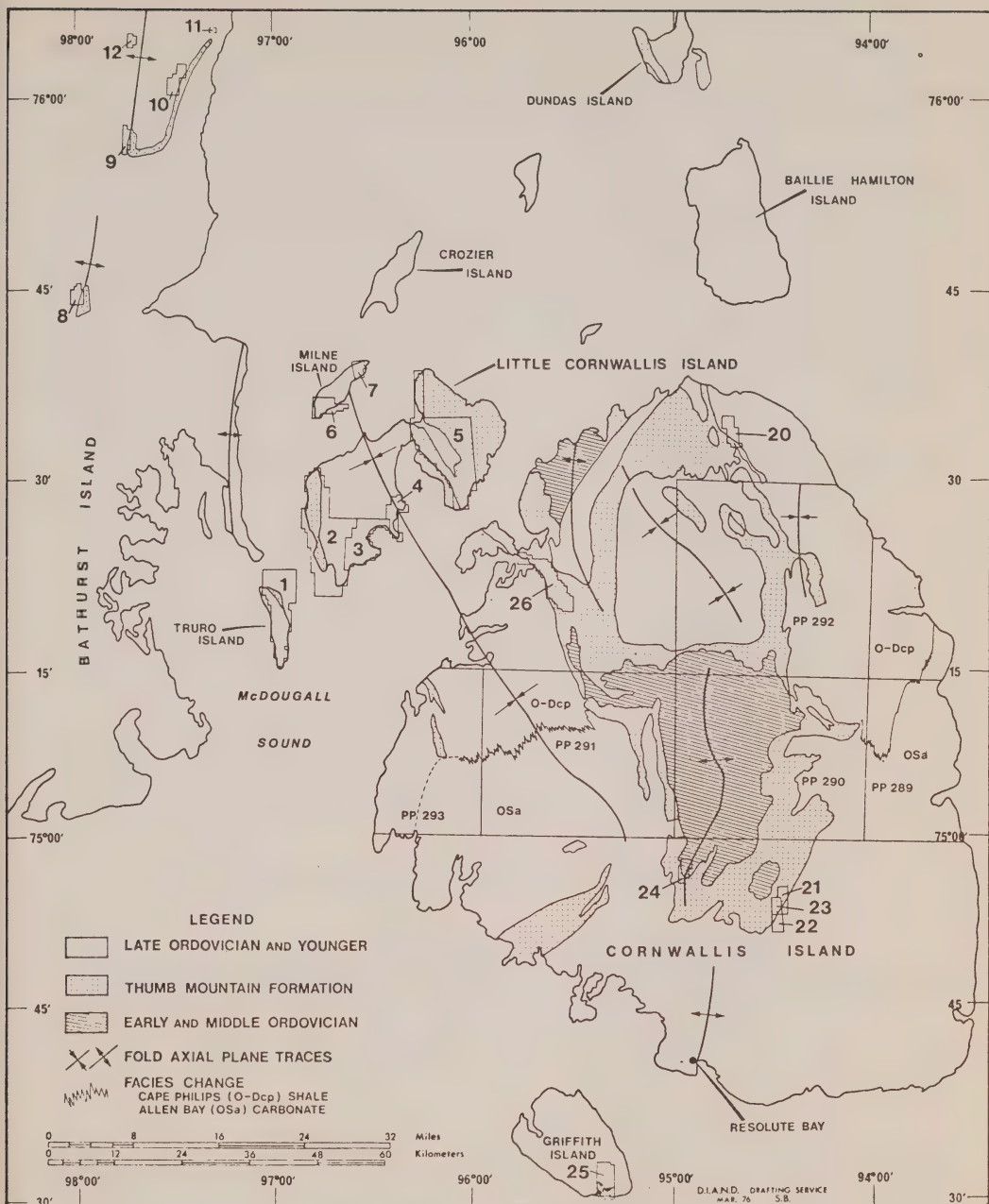


Figure 5. Geological sketch map showing areas explored within the Cornwallis Fold Belt. Claim blocks 1-26, and prospecting permits (pp) explained on the facing page. Geology from Thorsteinsson and Kerr (1968).

CURRENT WORK AND RESULTS

No work has been reported on this claim group which was acquired by Cominco Ltd. in 1974.

ARVIK PROJECT
Cominco Ltd.,
200 Granville Square,
Vancouver, B.C.

Pb, Zn
68 H/9, 10
75°30'N, 96°30'W

Bankeno Mines Ltd.,
40 University Avenue,
Toronto, Ontario.

Arvik Mines Ltd.,
P.O. Box 1979,
Yellowknife, N.W.T.

REFERENCES

Kerr (1972); Laporte (1973a, 1974b); Thorpe (1966); Thorsteinsson (1958); Thorsteinsson and Kerr (1968).

PROPERTY

Prospecting Permit 253	68 H/8
Prospecting Permit 254	68 H/9
MARY 1-19, RID 1-119, VAT 1-26, WEB 1-4	68 H/7, 8
GAR 1-17, LEE 1-58, TAG 1-10, TWIN 1-26	68 H/8
POL 1-283, WAL 1-431, WEB 1-4	68 H/8, 9
ECLIPSE 1-22, TUNDRA 1-19	68 H/9
49 Un-named claims N32665-713	
MIL 1-31, LYNN 1-20	

LOCATION

The Prospecting Permits cover the Marshall Peninsula on Cornwallis Island and most of Little Cornwallis Island. The claim groups are located on Little Cornwallis Island, centred at latitude 75°30' and longitude 96°30'W.

Little Cornwallis Island and the Polaris Property (Figure 5, No. 2) are about 75 miles northwest of Resolute, the nearest point served by scheduled air service.

The POLARIS, TAG, GAR, RID, WEB, MARY, VAT, TWIN and POL claims form a continuous group of 525 claims covering the southwest corner of Little Cornwallis Island (Figure 5, No. 2). The 58 LEE claims lie four miles to the east and the ECLIPSE, WAL, TUNDRA and 48 un-named claims of the 520 claim ECLIPSE property lie along the east shore of Templeton Bay, on the same island, (Figure 5, Nos. 4 and 5). MIL and LYNN are on Milne Island (Figure 5, Nos. 6 and 7).

The POLARIS Property is accessible by boat during the short shipping season.

HISTORY

Two lead-zinc showings were discovered on Little Cornwallis Island in 1960 by geologists of Bankeno Mines Limited during oil exploration. The western showing was staked as the POLARIS group and nine diamond drill holes, totalling 632 feet, were drilled that year. The results were discouraging (Schiller, 1965).

Bankeno Mines Limited acquired Prospecting Permits 19 and 20 in 1961 and mapped and soil sampled the eastern showing. During 1963, the 22 ECLIPSE claims were staked and the showings were channel-sampled. The results of this work were presented to Cominco Limited and an exploration agreement arranged.

Exploration in 1964 included geological mapping, statistical counts of mineralized rubble and geochemical soil-sampling of the ECLIPSE claims, to delimit the areas of mineralized surface material. Pitting within these areas exposed oxidized galena-sphalerite-marcasite concentrations. Nineteen TUNDRA claims were added to the property at this time.

In 1965, 37 vertical drill holes, totalling 2,311 feet, were drilled and 15.5 line-miles surveyed by IP on the ECLIPSE claims (Thorpe, 1966). The drilling partly outlined three separate zones of lead-zinc concentration and forty-nine un-named claims were added to the property. In 1966, 1,522 feet of drilling tested the ECLIPSE claims: 11 line-miles of IP and soil geochemical surveys and 200 cubic yards of trenching tested the POLARIS claims. Geochemical reconnaissance stream sediment surveys covered both properties. Part of the diamond drilling on the ECLIPSE claims tested anomalies adjacent to the main zone and intersected barren slightly graphitic carbonaceous limestone.

A gravity survey of the ECLIPSE group in 1971 and 1972 outlined two isolated peaks of 0.3 to 0.4 milligal amplitude within a larger low-amplitude anomaly trending northwest from the south border of the claim group. A similar 0.3 milligal anomaly to the northwest was outlined in 1970 over the mineral showing drilled in 1965 (Laporte, 1974a).

During 1971 and 1972, geological mapping, extensive gravity surveys and some soil sampling covered parts of Little Cornwallis Island (Laporte, 1974b).

The Polaris Deposit, tested by 34,042 feet of diamond drilling in 1971 and 1972, was the scene of extensive underground development in the winter of 1972-73. A permanent camp was established, mining equipment and supplies shipped to the site, a decline collared, and approximately 300 feet of a 9 x 12 foot adit completed in 1972.

The POL, LEE and WAL claims were acquired in 1973.

The MIL and LYNN claims had lapsed by January 1976.

DESCRIPTION

Cominco Limited's 1971 and 1972 detailed mapping show most claims underlain by Cape Phillips Formation shale, limestone, cherty limestone, chert and dolomitic limestone. The TWIN and TAG claims to the north, west and south of the POLARIS group are underlain mainly by Thumb Mountain Formation limestone and dolostone, and the overlying Irene Bay Formation.

shales, (Laporte, 1974b). The POLARIS and eastern claim groups were described by Laporte (1974a).

Lead-zinc occurs at Polaris Mine, Little Cornwallis Island in the upper 450 feet of the Thumb Mountain Formation limestones and dolostones of middle to upper Ordovician age. These constitute the oldest rocks exposed on the west limb of north to north-northeast striking syncline.

A major unconformity between the middle Devonian Disappointment Bay Formation and the late Ordovician to early Devonian Cape Phillips Formation has been recognized 4 to 5 miles north and northeast of the Polaris Mine.

The Thumb Mountain Formation is overlain by marine shale and limestone of the Irene Bay Formation. Various marker beds have been identified within and adjacent to the ore and a spatial relationship has been shown between areas of complete dolomitisation and ore.

The strike of the ore zone and host rock is north to northwest and both have moderate to gentle dips to the west. The ore appears to be located in a zone of solution and brecciation and there is a keel under the central part of the ore body.

CURRENT WORK AND RESULTS

Surface work on Little Cornwallis Island during 1973 comprised minor geological mapping and 14,405 feet of diamond drilling in 27 widely spaced holes.

The 1973 underground work at Polaris included about 2000 feet of underground workings and 22,545 feet of underground diamond drilling which confirmed published reserves (Laporte, 1974) of 20 million tons of 20% combined lead and zinc. About 3600 tons of sulphides were shipped to St. Joe Minerals, Balmat, N.Y., for metallurgical testing. Feasibility studies on production are underway.

No work has been recorded on the LYNN and MIL groups, but presumably enough exploration has been done to assess them as the claims were allowed to lapse in 1975.

CHURCHILL PROVINCE

(Southeastern corner of the
Mackenzie District)

Activity in the Churchill Province (Figure 1, Page 3) was confined to a few properties south of the East Arm of Great Slave Lake where targets include uranium in granitic rocks and in the Nonacho Group of supra-crustal rocks, and copper, silver, and fluorite in the gneissic complex cut by the McDonald Fault system.

With the exception of the Nonacho Group and related rocks most of the Churchill Province in the Mackenzie District is a crystalline complex comprised of granitic and gneissic rocks which commonly show evidence of a polymetamorphic history. The last deformation for most of the granitic

rocks has been mainly fracturing, crushing and in places mylonitization.

Uranium is associated with the granitic rocks and with the Nonacho Group. In most cases, it occurs as pitchblende in narrow fillings in fractures and small veinlets in quartz stockworks. Disseminated chalcopyrite is found along some the splays of the McDonald Fault System and native silver has been recorded as narrow veinlets in mylonitized rocks adjacent to the southern edge of the East Arm Subprovince.

The Churchill Province is studded with lakes which permit access by fixed wing aircraft to within reasonable walking distance of most properties.

LOW
Imperial Oil Ltd.
500 - Sixth Ave., S.W.
Calgary, Alberta.
T2P 0S1

U
75 D/15

REFERENCES

Darnley *et al.* (1971); Wilson (1941); Darnley and Grasty (1972).

PROPERTY

LOW 1-12, A74551-62

LOCATION

The 12 LOW claims lie 65 miles 035° from Fort Smith, and 3 miles southeast of Robinson Lake.

HISTORY

The LOW claims were staked in July 1973 to cover uranium mineralization discovered by reconnaissance prospecting on selected areas covered by an airborne radiometric survey, (Darnley, *et al.* 1971)

DESCRIPTION

The area is underlain by granitic rocks of mixed origin. Wilson (1941) divided the rocks into three units: granite gneiss, mafic gneiss and granite.

Major northerly striking faults traverse the Robinson Lake area. Northerly trending foliation dips from 70° to vertical and is in places bent as much as 30° from this average trend. Most fractures and joints dip steeply and are either parallel or perpendicular to the foliation.

CURRENT WORK AND RESULTS

Detailed geological mapping, radiometric and reconnaissance geochemical surveys assessed the LOW mineral claims. Nearly 200 radioactive anomalies were discovered in minor fractures but none are considered economically important. Reconnaissance geology and prospecting covered the area between Dis and Robinson Lakes, including anomaly 26-1 (Darnley and Grasty, 1972).

AO, LP, KIZAN
Wm. W. Kizan
11833 - 53 Street,
Edmonton, Alberta.

U
75 F/4
61°06'N, 104°58'W

REFERENCES

McGlynn (1971); Taylor (1971)

PROPERTY

AO 1-5, A34167 and N79127
LP 8-19, A34153-65
KIZAN 1, A34172

LOCATION

This 20 claim group lies near the north end of Thekulthili Lake, 170 miles southeast of Yellowknife, and 80 miles due east of Fort Smith, the nearest and most logical departure point.

HISTORY

KIZAN 1 was staked in 1971, the AO and LP groups in 1972. Formerly the ground had been covered by parts of the ACE and LN groups. Previous work in the area is not well documented. Considerable exploration took place in the general area during the 1950's (McGlynn, 1971).

DESCRIPTION

The AO, LP, KIZAN group straddle the contact between the Nonacho Group and the granodiorite and allied granitic rocks that mainly form a basement to that series. Conglomerate and undivided Nonacho Group (Taylor, 1971) are the main supracrustal units exposed over the western half of the claims. These are in contact with later intrusive granodiorite and similar rocks of the basement complex that underlie the eastern half of the claims.

Uranium occurs on the claims in narrow breccia zones in granodiorite, in gently dipping quartz stockworks associated with vertical fracture systems cutting arkose or granite, and in narrow discontinuous fractures in near vertically dipping quartzite.

CURRENT WORK AND RESULTS

A mining engineer spent two days in June 1973 evaluating the claims. Numerous apparently recent trenches were examined and a number of samples taken for assay. These returned traces to low values of gold, silver, uranium, and in some cases copper. The best assay from a chip sample taken from the U-2 pit returned 2.5 lbs./ton U_3O_8 .

GIN
McAvoy, J.
Larkin, J.D.
Yellowknife, N.W.T.

Cu, Ag, Au, U
75 K/3
62°04'N 109°15'W

REFERENCE

Richardson *et al.* (1973); Stockwell *et al.* (1968).

LOCATION

GIN 1 is one mile east of the northwest arm of Nonacho Lake. Areas in which additional work was done are given in the narrative.

HISTORY

GIN 1 was staked in 1973 on a copper showing previously covered by the RUM and PARK groups, it had lapsed by January 1976.

CURRENT WORK AND RESULTS

John Larkin prospected in the Wildbread Bay area (75K/13); in the Tumpline Lake area (85I/8), where sandblasting tested a copper showing; and in the area just east of the northwest arm of Nonacho Lake (75K/3) where trenches on a copper showing were resampled. A composite result gave 25 feet of 1.7% Cu, including 5 feet of 3.42% Cu. The GIN 1 was staked on the showing which had originally been covered by the RUM 4, in 1954. Further samples from the GIN showing averaged 17 feet of 2.36% Cu and 2.36 oz/ton Ag, and 13 feet of 3.0 oz/ton Ag and 2.07% Cu.

In August, Larkin sampled trenches west of Giant Yellowknife Mines Limited, in granite porphyry on the lapsed BIG JOHN claims, and in September prospected an area of radiometric highs detected by an airborne scintillometer survey (Richardson *et al.*) in the Robb Lake area.

Larkin and J. McAvoy explored for the cause of radio and compass deflections 25 miles north of the Contwoyto Lake Beacon (76 E/NE).

HOB
Hudson's Bay Oil and Gas Company Ltd.
12th Floor
10 King Street E.
Toronto, Ontario
M5C 1C3

Cu, Ag
75 L/8
62°19'N, 110°27'W

REFERENCES

Barnes (1951); Hoffman (1968).

PROPERTY

HOB 9-26, A71352-4, 57-9, 62-3.

LOCATION

The claims lie 2 miles south of Toopon Lake just east of the Snowdrift River. A trail leads from Toopon Lake to the drill sites.

HISTORY

The HOB 9-26 claims were staked in February 1973 for Hudsons Bay Oil and Gas Company. The claims had lapsed by 1976.

An area including a segment of the McDonald Fault, on the north-east arm of Great Slave Lake was flown in mid-March and late April 1971, by Geo-X Surveys Ltd., of Vancouver, B.C. Several airborne electromagnetic anomalies were located on the ground with a McPharr VHEM unit, and the prime conductor was traced for a distance of 3000 feet.

DESCRIPTION

The HOB group straddles the McDonald Fault which, in the claim area brings Murky Formation, conglomerate and sandstone of the East Arm Supergroup, on the north into contact with the mylonitic to cataclastic gneissic complex of the Churchill Province, to the south (Barnes, 1951).

The conductor-covered by the HOB group does not outcrop but a trench near its northeast extremity contains disseminated chalcopyrite.

Outcrop in the vicinity of the conductor indicates that it probably occurs at the contact between a quartz granule conglomerate and an argillite, which may be a fault contact.

CURRENT WORK AND RESULTS

Two diamond drill holes put down at -45° in a northwesterly direction tested the ground geophysical conductor on claims HOB 15 and 21. Hole FL-1-73 was drilled to a depth of 322 feet, approximately 1300 feet southwest along the strike of the conductor hole FL-2-73 was drilled to a depth of 383 feet. Carbonate, mudstone quartz granule conglomerate, and a graphitic conductor were encountered. Graphitic beds intersected at 161 feet in Hole FL-1-73 and at 45 feet in FL-2-73 are very hard and sheared in hand specimen suggesting a graphitic mylonite.

BEV
Nor-Can Minerals Ltd.
10534 - 109th Street
Edmonton, Alberta

Cu, Ag
85 H/10
61°30'N, 112°35'W

REFERENCES

Brown (1950a, 1950b, 1950c); Camsell (1916); Douglas (1959); Hoffman (1968); Lord (1941); Padgham *et al.* (1975); Reinhardt (1969); Stockwell (1936); Thorpe (1972a).

PROPERTY

BEV 1-3, 14, 15, 23, 24, 91-27, A37331-3, 69, A5943, 5, N86483, 551-7, N82207

LOCATION

The BEV claims lie on the south shore of Great Slave Lake at the mouth of the Thubun River, 88 miles southeast of Yellowknife, and 110 miles northeast of Hay River.

HISTORY

A part of the BEV claims was once covered by the MGB claims, but records of work are not available.

In 1948, a large claim group was staked in the area by C. C. Bevan to cover radioactive anomalies but when it became apparent that these were caused by disseminated thorium in the granitic rocks the claims were allowed to lapse.

The ground was restaked as the BC, BELL, BEV and GONE claims between 1964 and 1969, and transferred to Bevco Mines Ltd. before March 1970, and again by Nor-Can Minerals Ltd. in June 1972. Between 1966 and 1969 trenching and diamond drilling were conducted on the main copper showing on BEV 96 and 99, helicopter borne magnetic, ground EM and geological mapping at 1 inch to 500 feet covered the southeast claim blocks. In 1969, 1500 feet of drilling in 11 holes tested the CB claims about two miles to the southeast.

DESCRIPTION

The BEV claims are underlain by migmatite, granite and aplite, minor granulite and a basic rock that is probably amphibolite. Mylonite occurs in a northeast trending zone south of the Thubun River. North of the Thubun River, granitic metasediments, mixed metasediments and gabbro have been mapped and Reinhardt (1969) shows a zone of migmatite on line of strike to the northeast.

The Main Showing occurs on BEV 96 and 99. The north Eagle Showing lies about 2,000 feet south of the Main Showing on BEV 92 and 93 and there is a third showing on BEV 14. These showings strike northeast, east and northwest respectively. The mineralization consists mainly of chalcopyrite, with minor fluorite, barite and galena.

CURRENT WORK AND RESULTS

Geological mapping on a 1-inch = 400 foot scale covered BEV 1-3, 91-92, 96, 99 in 1973. The North Eagle Showing contains subeconomic copper mineralization in easterly striking calcite-quartz veinlets spaced from one inch to one foot apart. Extension of the North Eagle mineralization southward under the muskeg is possible. This showing may be related to an extensive Klyceptor anomaly, which at its northeast end has a trench reportedly assaying 1.52% Cu and 20 oz/ton of Ag over 16 feet.

ED
Fred Diamion
P.O. Box 291
Hay River, N.W.T.

Ag, Cu
85 H/9
61°51'30"N, 112°10'W

REFERENCES

Baragar and Hornbrook (1963); Hoffman (1968); Lord (1951); Reinhardt (1969)

PROPERTY

ED 1-9, N80136

LOCATION

The ED group is located on the south shore of Hornby Channel in the western part of the East Arm of Great Slave Lake. The claims, which border the lake shore are readily accessible from the lake.

HISTORY

The ED claims were staked in 1968 during a prospecting program in part financed by a N.W.T. prospectors assistance grant.

DESCRIPTION

Most of the bedrock on the claims is crushed and locally mylonitized granitic gneiss, considered part of the Churchill Structural Province. Considerable work has been done on the claims testing a native silver occurrence.

CURRENT WORK AND RESULTS

In July 1973, two trenches were blasted on ED-6 claim, and the claims were prospected. In October, a 549 foot hole was drilled in a south-easterly direction on the northern part of claim ED 6. This hole was probably designed to test the ground beneath trench No. 5 on this claim. It cut greenish, mylonitic metamorphic rocks containing minor amounts of sulphides, mainly pyrites, and some calcite veining.

EAST ARM SUBPROVINCE

The East Arm Subprovince, termed the Athapuscow Aulacogen by Hoffman (1973) is underlain by an assemblage of relatively unmetamorphosed and little deformed supracrustal rocks, mainly of sedimentary origin.

A wide variety of mineral deposits occur throughout the East Arm Subprovince but few have been found that are rich enough or large enough to warrant mining. Deposits of uranium, copper, lead-zinc, barite and nickel-cobalt, the latter being the only producers, are scattered throughout the region. There was little exploration in the area during 1973, the recent extensive uranium interest having declined completely.

Nearly all parts of the East Arm Subprovince are accessible to bush aircraft and most of it is within a few miles of Great Slave Lake which is serviced by tug-barge transport.

PEKANATUI POINT, MURKY CHANNEL
F. Diamion
P.O. Box 291, Hay River, N.W.T.

Cu
75^{L/4}
62°08'N, 111°38'W

REFERENCES

Hoffman (1968); Stockwell *et al.* (1964).

LOCATION

Pekangatui Point is in the East Arm of Great Slave Lake, approximately 110 miles east of Yellowknife.

DESCRIPTION

Pekangatui Point is underlain by Kahochella, Pethei, Stark and Tochatwi Formations, East Arm Supergroup. Copper occurs in the Kahochella Formation on the Point and in the underlying Wilson Island Group on Murky Channel.

CURRENT WORK AND RESULTS

Pekangatui Point area was prospected by F. and N. Diamion. A 96 foot deep drill hole tested Kahochella Formation on the point but only iron pyrites and minor sulphides were encountered. Hornby channel was prospected.

G GROUP
Giant Yellowknife Mines Ltd.,
Yellowknife, N.W.T.

Cu
75^{L/9}
62°44'N, 110°05'W

REFERENCES

Hoffman (1968); Padgham *et al.* (1975); Wright (1950).

PROPERTY

G 1-22, A10666-87

LOCATION

The claims are on Douglas Peninsula, on and adjacent to a small inlet on the south side of Wildbread Bay approximately 130 miles east of Yellowknife.

HISTORY

Claims G 1-58 were staked by H. Whitford and J. Arden for Giant Yellowknife Mines Ltd. in September 1969. In 1970, reconnaissance geological mapping covered the claims and since then G 23-58 on the southwest and south sides of the claim block have lapsed. Trenching and geological mapping at 1 inch to 500 feet explored the claims in 1971 and mineralized zones were mapped at 1 inch to 50 feet.

DESCRIPTION

The G claims are underlain by Aphebian age, sedimentary rocks of the Pethei Group mainly limestones and dolostones of the Utsingi Formation. To the north a small area on the coast of Wildbread Bay has been mapped as marlstones of the underlying Douglas Peninsula Formation. A diabase sill and the overlying Wildbread Formation are exposed on the area previously held as claims G 23-58.

The Taltheilei Formation is absent in this area (Hoffman, 1968).

On claims G-8 and G-9, northwesterly striking quartz-carbonate veins occur in fractured Utsingi Formation dolostones and dolomitized limestone between two northeasterly striking faults, which are 350 to 550 feet apart. The veins contain disseminated chalcopyrite, bornite and locally magnetite.

CURRENT WORK AND RESULTS

In late 1972 and early 1973, 5797 feet of drilling in 17 holes, outlined a northwest striking zone of mineralization mainly in brecciated dolostone and to a lesser extent in siltstone on claims G-8 and G-9. This zone is more than 600 feet long and has a width of about 10 feet but the average grade is less than 1% Cu. The best intersection graded 1.23% Cu over 53 feet.

GAP GROUP
Giant Yellowknife Mines Ltd.
P.O. Box 40,
Commerce Court West,
Toronto, Ontario or Yellowknife, N.W.T.

Cu
75°L/15, 16
62°45'N, 110°31'W

REFERENCES

Hoffman (1968); Wright (1950).

PROPERTY

GAP 1-16, 20-22, 28-29, A10961; 80-82, 88-89.

LOCATION

The claims are situated approximately 125 miles east-northeast of Yellowknife, in the East Arm of Great Slave Lake, 2¼ miles west of the "gap" which separates the Pethei Peninsula from Douglas Peninsula, and just south of the isthmus joining the Pethei and Kahochella Peninsulas.

HISTORY

Copper was discovered in 1969 by J.E. Stevens, a prospector, working for Giant Yellowknife Mines Ltd. and forty-five claims were staked to cover the showings. Originally the claim block extended southward beyond its present limits.

During 1970, the GAP group was mapped at 1:6000 scale and quartz-carbonate veins on the claims were mapped at 1:600 scale.

DESCRIPTION

The GAP claims are underlain by gently south to southwest dipping Aphebian sedimentary rocks. From Wildbread Bay to the south boundary of the claims, the succession from oldest to youngest, includes the McLeod Bay and Charlton Bay Formations of the Kahochella Group followed by the Douglas Peninsula and Utsingi Formations of the Pethei Group. The McLeod Bay Formation, red shale with abundant calcareous concretions, is exposed along the coast line to the north, except for 2 700 feet section where the green argillites of the overlying Charlton Bay Formation reach the lake. Utsingi Formation limestone underlies more than 75% of the claims.

Quartz-carbonate veins with some chalcopyrite, bornite, magnetite, hematite and pyrite occur in limestone and dolomite of the Utsingi Formation and to a minor extent in the underlying red marlstones of the Douglas Peninsula Formation.

Two southwesterly striking, converging faults have been mapped in the northeast part of the claim group. Between them a wedge of Utsingi Formation dolomite has been let down into the underlying Charlton Bay Formation. This wedge of dolomite contains many quartz-carbonate veins most of which are northwest striking. A second area of quartz-carbonate veining occurs immediately to the southwest on the GAP 12 in Utsingi Formation Limestone. Vein orientations are variable, and in addition to the northwest trend, veins striking north-northeast are prominent.

A diabase sill exposed on Kahochella Peninsula reaches within 900 feet of the northern boundary of the claim group.

CURRENT WORK AND RESULTS

During March and April 1973, 1038 feet of diamond drilling in 3 holes was drilled on Gap 10, 11 and 6. Shale with minor limestone and dolomite was intersected and 82 feet of pyrite and chalcopyrite mineralization

were recorded in hole 3 on GAP 6, but no assays were reported. The mineralization is in a fracture zone in shale.

CU GROUP
Nor-Can Minerals Ltd.
11628 - 149th Street
Edmonton, Alberta.

Cu
85⁰H/10
61⁰37'N, 112⁰40'W

REFERENCES

Hoffman (1968); Stockwell (1936)

PROPERTY

CU 1-20, N96189 and most of A10511-30

LOCATION

The 18 CU claims lie 76 miles southeast of Yellowknife in the Petitot Islands, at the entrance to the East Arm of Great Slave Lake.

HISTORY

The CU claims were held by C.C. Bevan from October 1966 until October 1969, when they were transferred to Nor-Can Minerals Ltd. In 1970, 785 feet of diamond drilling in eight holes tested the claims.

DESCRIPTION

The CU claims are underlain by chloritised granite to the northwest and sandstones and quartzites of the Et-then group to the southeast Stockwell (1936), (Hoffman, 1968). A fault, shown striking northeast through the claim group and continuing through the centre of Union Island, separates rocks of the Et-then group from the granite in the claim area. Copper mineralization is associated with quartz veins.

CURRENT WORK AND RESULTS

Trenching was done in 1973.

INTERIOR PLAINS REGION - PINE POINT DISTRICT

The Interior Plains are a vast area in which the Precambrian Shield is covered by flat lying, dominantly Paleozoic carbonate formations, overlain by extensive younger clastic formations derived by erosion of the ancestral Cordilleran geanticline to the west. Included in this region is the Pine Point District, the source of a major portion of the Northwest Territories yearly mineral production.

Much of the exploration in this area is conducted by Pine Point Mines Limited on their mineral leases and such information is rarely made public in more than summary form. Because of extensive overburden, the flat lying attitude of the host rocks, and the nature of the "Pine Point type" lead-zinc mineralization, exploration is mainly by IP surveys followed by drilling of any anomalies outlined.

The Pine Point area is one of the few in the Territories that is sufficiently well serviced by roads so that aircraft are unnecessary for access. In the winter when the widespread swamps and muskegs are frozen most parts of the area are easily reached by snowmobile or larger tracked vehicles from the main highways.

A map, Figure 6, shows the drill holes reported for assessment credit during 1973. Most were drilled by Pine Point Mines Ltd., a few by Conwest Exploration. As the geology is relatively uniform in the area and outcrop is almost non-existent detailed descriptions are meaningless and only 5 properties are described.

Table 3 and Figure 6 give a summary of the 1973 exploration.

TC GROUP
Pine Point Mines Ltd.
Pine Point, N.W.T.

Pb, Zn
85°A/13
60°57'N, 113°55'W

REFERENCES

Hornal *et al.* (In Press); Norris (1965); Schiller (1965); Thorpe (1966)

PROPERTY

TC 1-145, A31201-300; A31101-45.

LOCATION

The claim group is approximately 17 miles east of the village of Pine Point just south of Great Slave Lake. Highway No. 6 from Pine Point to Fort Resolution crosses the claims.

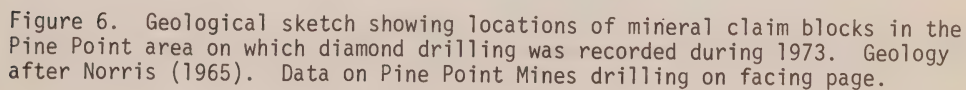
HISTORY

The claims were staked in June 1972 for Pine Point Mines Ltd.

TABLE III
DIAMOND DRILL HOLES ON PINE POINT MINES LTD. CLAIMS

CLAIM NAME	TAG NO.	DRILL HOLE NUMBER(S)	FOOTAGE	NTS 85
TC 13	A31215	2490	200	A 13
-- 19	----19	--92	150	-- --
-- 20	----20	--91	130	-- --
-- 32	----32	--69	256	-- --
-- 36	----36	--93	148	-- --
-- 39	----38	--94	148	-- --
-- 50	----50	--44	250	-- --
-- 53	----53	--97	211	-- --
-- 54	----54	--96	190	-- --
-- 55	----55	--49	256	-- --
-- 57	----57	--54	252	-- --
-- 62	----62	--55	251	-- --
-- 65	----65	--51	254	-- --
-- 66	----66	--50	250	-- --
-- 135	A31135	--52	257	-- --
-- 140	----40	--53	157	-- --
AUD 63	A15263	2408	156	B 10
--- 81	----81	--09	434	-- --
--- 91-100*	A15291-300	--07	406	-- --
--- 116-129*	A15246-59	--06	400	-- --
SAND 41-42*	A12768-9	--10	258	-- --
WS 1	T47243	R61-42, 43, 58	1358	B 15
CARR 1	----45	R61-47, 48		-- --
HAH 2	A48544	2642	318	-- --
COL 4	A12643	2439	202	B 16
CW 5	A31147	--74	265	-- --
CW 24-25*	A31159-60	--32	652	-- --
DE 1-2	A31061-62	--11	490	-- --
DUVL 1	A48401	2504	303	-- --
---- 9	----9	---5	278	-- --
---- 16	----16	---7	344	-- --
---- 17	-----7	---8	392	-- --
---- 48	----48	--27	356	-- --
---- 49	A48449	2423	312	-- --
GW 22	A12605	--42	205	-- --
JEAN 28	A56687			
TAN 68*	T98611	2414	280	-- --
JEAN 47-54*	A5647, A15354	--22	688	-- --
KL 19	A48619	--20	205	-- --
-- 20	----20	2418, 2419	441	-- --
-- 22	-----2	2417	200	-- --
LF 21-22	A5566-7	--29	317	-- --
OG 10	A5477	--73	263	-- --
PAT 23	A15347	--75	265	-- --
PR 9	A31099			
TK 9*	A5553	2430	203	-- --
PR 10	A31090	--31	202	-- --
TAN 10	A56853	--12	271	-- --
--- 89	T98632	---5	312	-- --
--- 117	A5730	---6	356	-- --
TK 19-20*	A5290-1	--21	450	-- --
WIN 4	22160	2572	531	-- --
--- 3	N22161	2581	435	-- --
--- 7	N4265	--76	593	-- --
Y 45	N65545	--85	585	-- --
- 63	----63	---6	648	-- --
- 67	-----7	2459	330	-- --
- 71	----71	---8	605	-- --
- 73	-----3	--68	605	-- --
- 76	N65576	--57	652	-- --
ZAP 20	A12717	--25	162	-- --
--- 23	----20	---6	379	-- --
--- 24	----21	--8	204	-- --
ZOT 33	---691	--24	361	-- --
BM 25	T5246	--37	190	-- --

*Hole drilled on the boundary of the two claims listed.



DESCRIPTION

The claim group is underlain by limestone, dolostone, shale and evaporite of Middle Devonian age.

CURRENT WORK AND RESULTS

In January 1973, nine holes totalling 2,183 feet were drilled to check weak IP anomalies. The nine holes did not encounter significant mineralization and only one was sampled. Hole 2455 on TC 62 assayed Pb trace, Zn 0.1%, Fe 0.4% between 210 feet and 218 feet. Figure 6 shows these holes.

SLAVE POINT PROJECT
Conwest Exploration Co. Ltd.
Newconex Canadian Exploration Ltd.
New Park Mines Ltd.

Pb, Zn
85 B/15, 16
60°51'N, 114°31'W

Conwest Exploration Co. Ltd.
10th Floor - 85 Richmond Street West,
Toronto, Ontario.

REFERENCES

Douglas (1959); Hornal et al. (In Press); Norris (1965); Schiller (1965) Thorpe (1966).

PROPERTY

KK 1-8, T46141-8
ROC 25-100, N29625-72, N69973-70000

LOCATION

Three miles north of the village of Pine Point, the Slave Project covered the ROC and KK groups. The ROC group lies about 10 miles northwest of the village of Pine Point and 3 miles south of Great Slave Lake. In winter, the property can be reached by two wheel drive vehicle by bush road running north from the Pine Point-Hay River highway. In summer, a four wheel drive vehicle can be used to reach a point a few miles south of the claims.

The KK group lies approximately 15 miles east-northeast of village of Pine Point. The highway from Pine Point to Fort Resolution passes within a few hundred feet of the southeast corner of the claim group.

HISTORY

Extensive staking, IP surveying and diamond drilling took place in the Pine Point area between 1965 and 1967.

Along the perimeter of the extensive holdings of Pine Point Mines Ltd., five zinc-lead deposits were discovered; two by Pyramid Mining Company Ltd., two by Coronet Mines Ltd., and the 408 Deposit by Conwest-Goldfields

Pine Point Project. The ROC and KK claims were acquired in 1971. Drilling in 1973 tested IP anomalies located by surveys done in 1971 and 1972.

DESCRIPTION

Norris (1965) shows the area covered by the ROC claims underlain by limestones and dolostones of the Sulphur Point Formation of Middle Devonian age and the area covered by the KK claims underlain by the Nyarling Formation, comprising gypsum, limestone and dolostone and a fine grained dolostone member of the Pine Point Formation, of Middle Devonian age.

CURRENT WORK AND RESULTS

Five diamond drill holes on the KK 1 and 3 on ROC 79 claim totalled 4857 feet. The holes were drilled to investigate IP anomalies but economic grades of lead-zinc mineralization were not encountered. These 8 diamond drill holes are shown on Figure 6.

TAN, DE
Pine Point Mines Ltd.
Pine Point, N.W.T.

Pb, Zn
85°B/16
60°47'N, 114°23'W

REFERENCES

Hornal *et al.* in press; Norris (1965); Schiller (1965); Thorpe (1966).

PROPERTY

DE 1-12, A31061-72
TAN 1-120, N56844-6900, T98601-54, A5725-33.

LOCATION

The claims are approximately 5 miles southwest of the village of Pine Point, 11 miles south of Great Slave Lake and one mile south of Highway No. 6.

HISTORY

The TAN group was staked in 1969, the DE group in 1971. Drilling on the TAN group include four holes, totalling 2,411 feet in March 1970, a fifth hole 185 feet deep, in March 1971 and two holes totalling 534 feet in March 1972. No significant mineralization was intersected. One 386 foot hole was drilled on the DE claims in February 1972. No significant mineralization was intersected.

DESCRIPTION

The claim group is underlain by limestone, dolostone, evaporite and shale of Middle Devonian age.

CURRENT WORK AND RESULTS

In February 1973, five holes were drilled on the TAN claims and one hole was drilled on the DE claims for a total of 2,159 feet. None of the holes intersected significant amounts of mineralization.

SLAVE PROVINCE

The Slave Province is an Archean structural block composed of supra-crustal belts surrounded and locally intruded by granitic rocks. In places, quartzo-feldspathic rocks, basement to the supracrustal belts, have been recognized.

Among exploration targets in this province are volcanogenic massive sulphide deposits which may contain significant amounts of copper, zinc, or silver. Some contain relatively large proportions of lead, gold quartz veins, gold-quartz-carbonate shear zones, and apparently stratabound gold bearing sulphide iron formation, possibly of exhalative origin.

Discoveries by Cominco on their Bathurst Norsemes properties sparked extensive exploration in the northern Slave volcanic belts. More recent discoveries in the Takijuq-Itchen-Point Lakes belt have maintained a high level of activity.

Access to the Slave Province properties, except during break up and freeze up, is particularly easy because there is rarely more than a mile or two between lakes suitable for fixed wing aircraft which are readily available in great variety in Yellowknife.

BRISLANE LAKE PROPERTY
Indian Mountain Metal Mines
1601 8 King St. East,
Toronto, Ontario.

75°M/2
63°07'N, 110°56'W

REFERENCE

Heywood and Davidson (1969); Thorpe (1966, 1972a).

PROPERTY

DALE 1-46, A77635-680.

LOCATION

DALE 1-46 lie on the west shore of Brislane Lake, 120 miles easterly from Yellowknife and 20 miles north of McLeod Bay on the East Arm of Great Slave Lake.

HISTORY

Base metals were discovered in the Indian Mountain Lake area by J. McAvoy and a number of claim groups staked. Exploration has included 12,000 feet of drilling on the B.B. zone, 8 miles to the south.

The DALE claims cover ground originally (late 1940's) staked as the VOY group. Captain Yellowknife Mines Limited drilled 1500 feet on the VOY claims in 1949.

In 1964, the area was held as the DAWN (109222) GEM (112019) groups, and parts of the SOLD (N38315).

During 1965-66, geological and geophysical surveys and diamond drilling tested a large area including the DAWN and GEM claims. Two grids comprising 7 and 16 line miles of EM survey, and detailed geological mapping located 10 targets which were later drilled.

DESCRIPTION

The regional geology is dominated by a large anticline with a core of tonalitic basement rock, overlain by a thick pile of volcanic formations, grading from mafic flows to felsic pyroclastics, (Heywood and Davidson, 1969). Massive and disseminated sulphide deposits have been located in the upper phases of the volcanic pile, with copper more abundant in andesitic phases and lead-zinc in the higher felsic phases.

The DALE group geology, is a smaller scale version of the regional picture.

Some 47 holes were drilled to test targets located by the 1964 EM surveys.

Seven lenses of base metal mineralization were outlined by this drilling. Eight holes intersected "near ore grade" copper-silver values on the No. 1 copper zone; 10 holes intersected ore grade copper-zinc-silver values on the No. 2 copper zone including 8 foot sections in two holes grading 5.75% Cu, 0.25% Zn, 2.00 oz/ton Ag and 1.92% Cu, 0.10% Zn, 3.52 oz/ton Ag (respectively). Northeast of the copper zones, narrow zinc rich intersections were obtained in 4 holes.

CURRENT WORK AND RESULTS

A report on the Brislane Lake Property was prepared by International Mine Services Limited in 1973, and the 46 DALE claims were staked to protect favourable ground in December of that year. An application for Northern Mineral Exploration Assistance was prepared for presentation in 1974.

CC CLAIMS
Windflower Mines Ltd. N.P.L.
4405 Glencanyon,
North Vancouver, British Columbia.

Zn, Pb
76 B/4
64°06'N, 107°40'W

REFERENCES

Wright (1967)

PROPERTY

CC 1-200, A71801-A7200

LOCATION

The CC claims situated approximately 230 miles northeast of Yellowknife are composed of a main group and a satellite group, a mile to the southeast. The two claim groups lie along the shore of the northwest part of Clinton Colden Lake, separated from each other by a small inlet.

HISTORY

Showings discovered in the fall of 1972 by J. Larkin of a Yellowknife based prospecting syndicate were covered in May 1973 by the CC claims which were transferred to Windflower Mining Ltd. in July 1973.

DESCRIPTION

On a brief visit to these claims in early July 1973 showings on the southwest part of the main claim block were examined. Outcrop in the critical areas is obscured by boulders, some of which are mineralized with massive sphalerite, pyrite and minor galena. Mineralization appears to be in a zone of interbedded felsic and intermediate to mafic volcanics, with associated chert and tuff layers, minor breccia, and carbonate lenses.

These units strike northwest, have gentle to moderate dips to the southwest, and on the basis of one pillow observation face southwest. The sequence of the volcanics exhibits a succession in which mafic and inter-layered felsic volcanics are overlain by massive felsic volcanics. The latter, outcrop about 200 feet southwest of the shoreline of an inlet which extends northwest into the main claim block. The felsic rocks underlie higher ground and are relatively free from boulder cover.

A gossan on the satellite claim group is derived from fine grained mafic volcanics containing pyrrhotite and pyrite.

CURRENT WORK AND RESULTS

The results of ground EM and geological surveying on the claims are not available.

MTL
M. Kachowski
J. Magrum,
L. Rocher,
Yellowknife, N.W.T.

Ag, Au
76 C/9
64°40'N, 108°03'W

REFERENCES

Lord and Barnes (1954)

PROPERTY

MTL 1-12, A71441-52

LOCATION

The MTL claims lie 4 miles east of Muskox Lake, some 250 miles north-easterly of Yellowknife.

HISTORY

The MTL claims were staked in 1973, by M. Kachowski but no assessment work was recorded on the claims and they lapsed one year later.

DESCRIPTION

Volcanic rocks and greywacke sediments underlie the MTL claims. Numerous and extensive gossan zones occur within the volcanic rocks, mainly near the contact with the sediments, and probably at the top of the volcanic pile. Traces of gold and silver are reported in some of these gossans. (Lord and Parsons, 1954).

CURRENT WORK AND RESULTS

J. Magrum and L. Rocher of Yellowknife prospected northeast of Clinton-Colden Lake in the spring of 1973; in the Consolation Desperation Lakes, 70 miles east of Yellowknife in late June; and in the Aylmer Lake area in late August and September. Magrum drilled and blasted trenches for assessment credit on the M.T.L. claims in July.

Giant Yellowknife Mines Ltd.
P.O. Box 40,
Commerce Court West,
Toronto, Ontario or Yellowknife, N.W.T.

Cu
76 D/3
64°06'N, 111°16'W

REFERENCES

Moore (1956); Thorpe (1966)

PROPERTY

RED 1-24, N36649-668; N36735-37 and A71163.

LOCATION

The RED claims are situated 150 miles northeast of Yellowknife at the north end of Matthews Lake about 4 miles north of the old Tundra Mine.

When the Tundra Mine was operating a winter road was maintained to this area.

HISTORY

Staking for gold in the area began in 1934. Underground work at the Tundra Mine commenced in 1957 and the operations suspended in 1968.

Giant Yellowknife Mines Ltd. staked the 23 RED claims in 1964. Claim RED 24 staked by K. Rasmussen in 1973, over what had been the MC 5 claim was subsequently added to the group. Giant Yellowknife Mines Ltd. conducted a vertical loop EM and magnetometer surveys over claims RED 1-20 and the MC 5 claim. The EM survey indicated a number of northwesterly striking conductors. Some of these were tested in 1965 by four diamond drill holes totalling 2,175 feet. Hole number 4 intersected gold values of 0.02 oz/ton over 4 feet. Minor copper mineralization and massive pyrite was encountered in three holes, adequately explaining the conductors.

DESCRIPTION

The claim group is underlain mainly by felsic volcanics with andesites along the western margin of the claim group and sediments along the eastern side. A wedge of mafic volcanics extends two thirds of the way to the northern boundary from the southeast corner of the claim group.

The felsic volcanics are mainly flows with associated tuffs and thin interbeds of argillite. Dips are steep, generally to the east and by analogy with observations made elsewhere in the Archean Yellowknife Supergroup in the southern half of the Slave Province, the general succession appears to be from mafic to felsic volcanics and sediments.

A considerable thickness of felsic volcanic rocks in the Matthews Lake area, suggests base metal exploration potential as well as gold.

CURRENT WORK AND RESULTS

Three holes, numbered 5, 6 and 7 and totalling 1481 feet, tested a geophysical anomaly on the RED group. Two holes were inclined at -45° , the other at -50° at 070° . Hole 5 located on RED 19 intersected andesite and andesitic tuff. Hole 6 intersected rhyolitic fragmentals and diabase and was stopped at 408 feet in diabase. Hole 7 passed through rhyolitic fragmentals into pillowed andesite and terminated in andesite at 472 feet. Holes 6 and 7 were collared on RED 24.

Diamond drill hole #7 tested a TURAM conductor which was explained by quartz and pyrite in fractured rhyolite. A 1 foot section reportedly assayed 0.04 oz/ton Au.

BATHURST NORSEMINES PROJECT
Cominco Ltd.
2200 - 200 Granville Square,
Vancouver 2, B.C. V6C 2R2

Cu, Zn
76° F/1, 16, G/13
65° 55' N, 108° 20' W

REFERENCES

Jefferson *et al.* (1976); Padgham *et al.* (1975); Padgham *et al.* (1975a)

LOCATION

The Bathurst Norsemynes property consists of approximately 800 mineral claims in the Hackett River area, 300 miles northeast of Yellowknife. Claim groups included in the property are the BB, BAT, DL, HURST, LC, LD, ND, OX, RN, H, J, K, L, JO, OKT, ONO, AC, MAY, and JAR claims.

HISTORY

The property was optioned by Cominco from Bathurst Norsemynes Ltd. in January, 1970. Since then, Cominco has completed by the end of 1972; 926 miles of airborne EM and magnetic surveys, 150 line-miles of ground EM, 105 line-miles of ground magnetics, 9 line-miles of gravity surveys, 59 holes totalling 24,321 feet of diamond drilling, 500 cubic yards of trenching, and analysis of over 6,600 soil samples. The geology of the property was mapped at a scale of 1 inch to 1000 feet.

DESCRIPTION

The Bathurst Norsemynes property is underlain by a strongly deformed and metamorphosed sequence of mixed acid and intermediate volcanic rocks overlain by a thick pile of metagreywackes and metasilstones. Mineralization consists of massive Pb-Zn-Cu-Ag sulphides in the acid volcanic part of the sequence.

CURRENT WORK AND RESULTS

In 1973, 4,209 feet of diamond drilling in seven holes, tested the East Cleaver zone and the surface was re-mapped in detail.

Geophysical surveys in 1973 totalled 23.9 miles of horizontal loop EM, 11 miles of magnetics and 11.3 miles of gravity.

P CLAIMS

Mr. James Brady,
1372 Devon Road,
Oakville, Ontario.

Au

76 M/11

67°43'N, 111°25'W

REFERENCES

Schiller (1965); Thorpe (1966)

PROPERTY

P 1-6, A37439-93.

LOCATION

The P claims lie about 375 miles north-northeast of Yellowknife near the Arctic coast from which a 3½ mile long trail leads southwards to the area of 1973 drilling. A smaller lake near the trail reduces the distance by about ¾ mile, but this lake is only usable by a lightly loaded plane. The property is accessible by boat or barge during the shipping season.

HISTORY

The P group was staked in October 1963 by G. Bruce and Associates as the Sidewalk group, soon after discovery of the Sidewalk vein. The Sidewalk vein covered by claims N50015, P 33 and P 34 (previously N50014 and N50015) was probed in 1964 by 3,063 feet of drilling in seventeen diamond drill holes spaced 50 feet apart. Best intersections were 0.83 oz/ton over 13 feet; 0.62 oz/ton over 32½ feet, and 0.44 oz/ton over 19 feet. The deeper holes gave lower grade intersections.

Prospecting in 1964 revealed additional showings including the East Boundary Vein on what is now claim P 53 and the North vein now covered by claims P 18, 24, 29, 30, 35, 38 and 41. The closely associated Diane and Bobby veins have been mapped as extending south-southwest onto claim N50035.

On the East Boundary Vein, 13 pits and trenches were excavated and sampled by Precambrian Mining Services Ltd. in 1964. Erratic gold values, were obtained over a strike length of 300 feet. In 1965, James River Mines Ltd. blasted 66 trenches and collected 214 samples which gave lower grades than the previous sampling. Precambrian Mining Services Ltd. resampled, and obtained similar results.

The North vein extends northeast across the northwest corner of the H group of Consolidated Manitoba Mines Ltd. into the Q claim group.

James River Mines Ltd. succeeded the James River Syndicate. Canadian Dyno Mines Ltd. and subsequently International Mogul Mines Ltd. were reported as holding a substantial interest in James River Mines Ltd. In the 1972-73 Canadian Mines Handbook, (Northern Miner Press, 1972) the company is described as idle with no property.

The claims eventually lapsed and were restaked by J. Brady.

DESCRIPTION

Maps by the James River Mines Ltd. covering the area of the P group, show a fault striking northeast diagonally across the claims and separating Archean metasediments and metavolcanics of the Yellowknife Supergroup on the northwest from granitic rocks to the southeast. The Sidewalk vein dips on average 80° north and strikes 030° subparallel to the main northeast striking fault which lies about 750 feet to the northwest. Except for a few small veins in a contact phase of the intrusive rocks, the veins cut granitic rocks southeast of the main fault.

The Sidewalk Vein is 2,000 feet long and averages 20 feet in width. It consists of quartz mineralized with gold, pyrite, hematite, chalcopyrite and minor bornite. Schiller (1965) shows the vein concordant within the rhyolite sequences, but W.W. Weber of James River Mines Ltd. indicates that the vein occurs in gneissic granite, granodiorite and migmatite.

The writer visited the North Vein only in 1973. It strikes 030° , is approximately vertical and has been traced discontinuously over $1\frac{1}{2}$ miles. Trenching and sampling by Precambrian Mining Services in 1964 indicated 0.3 oz/ton Au over 7 feet for a strike length of 400 feet, and possibly as much as 0.84 oz/ton over 5 feet for a length of 320 feet in a separate section. Where the vein continues northeastwards across the northwest corner of the H group 0.48 oz/ton over 4 feet for a length of 160 feet were reported. The extension onto the G Group of McIntyre Porcupine (now the Q group) gave 0.33 oz/ton Au across 5 feet for 1,200 feet. Within this 1,200 foot length, a zone 350 feet long gave a value of 0.474 oz/ton Au across 7.2 feet. The North Vein was mapped by James River Mines Ltd. as lying within granitic rocks. Core recently obtained from the north end of the vein suggests a syenitic phase in that area.

The East Boundary Vein is in granitic rock. It strikes west-north-west, dips vertically, and attains 10 feet in width, but averages only 4 feet. Gold values in this vein are erratic with locally high assays indicated along 300 feet of strike length.

CURRENT WORK AND RESULTS

Drilling and prospecting was carried out in 1973. When the writer visited the property in September 1973, approximately 200 feet of drilling had been completed in 3 holes. One hole was located near the boundary of claims P 52 and P53, to test the East Boundary Vein. A second hole was sited to investigate the same vein near the North end of claim P 53. A third hole was believed located on claim P 24 and was sited to drill the North Vein.

Hope Bay Mines Ltd.
1840 - 777 Hornby Street,
Vancouver, British Columbia.

Ag
77 A/3
 $68^{\circ}12'N$, $106^{\circ}31'W$

REFERENCES

Fraser (1964); Thorpe (1972a).

PROPERTY

RUS 1-6	N35548-553; RUS 7-30, N35554-559, 528-543; N35887-888
RUS 31-56	N35889-894; N35895-900, N35111-112
RUS 55-77	N35469-483, 487-494
WEL 1-7	N35544-547, N35484-486
VAN 1-8	N35865-72
TED 1-7	T9275-81
CAT 1-4	T9237 and T9240
OX 1-6	T9282-87

LOCATION

The Ida Point property is south of Melville Sound, between Roberts Bay and Angimayor Sound, about 460 miles northeast of Yellowknife.

The Roberts Lake showing lies nearby on the VAN 4 claim 3/4 mile north of Roberts Lake which is suitable for float or ski equipped aircraft.

The nearest point served by scheduled aircraft is Cambridge Bay on Victoria Island approximately 80 miles to the northeast. The Ida property is accessible by barge or cat train from Cambridge Bay depending on the season.

HISTORY

Prospectors and geologists working for Roberts Bay Mining Company located the Ida Point showings in 1965 and 1966. At that time the Roberts Lake showing was sampled. During the following three seasons, geological mapping, prospecting, diamond drilling, geophysical and geochemical surveys by Duncan R. Derry Ltd., explored the showings for the Hope Bay Syndicate.

The area between the Ida Point and Roberts Lake showings was mapped at 1 inch to 400 feet in 1967 and 78 feet of diamond drilling tested the Roberts Lake showing. In 1968, diamond drilling, IP and geochemical surveys further tested the zone. Results suggested a continuation of the main sulphide showing westwards beneath the overburden. In 1969, 1,115 feet of diamond drilling and extensive trenching further explored the Roberts Lake showing. Trenches over both showings were deepened in 1972 revealing some additional silver mineralization at the Ida Point Showing. New Hope Bay Mines of California leased the claims from Roberts Mining Company and the Hope Bay Syndicate. The property is now being developed by Hope Bay Mines Ltd., a subsidiary of New Hope Bay Mines, incorporated in British Columbia.

DESCRIPTION

Native silver with minor nickel-cobalt arsenides and bismuth occurs in the Ida Point and Roberts Lake area which is underlain by Archean volcanic rocks bounded on the west, south and east by granitic rocks and on the north by Melville Sound. The Ida Point showings are on RUS 24 and 25 claims near the west shore of Angimayor Sound and toward the east side of the greenstone belt. Just east of the showing there is a gradation from volcanic to granitic rocks, and in the vicinity of the showing there are small sills and

granite dykes. The greenstones around the showing are thinly bedded probably waterlain tuffs but pillows are reported elsewhere in the belt presumably in mafic flows.

The metavolcanics around the Roberts Lake showing are probably tuffaceous in origin, and resemble those at the Ida Point showing three miles to the north except for being more granitized. Granitic rocks outcrop $\frac{1}{4}$ mile east of the showing.

The volcanic rocks display a well developed northeasterly striking, westward dipping regional foliation. Somewhat irregular pinching and swelling easterly striking fractures locally contain pods of quartz or calcite cemented breccia. Silver is found mainly in the calcite cemented breccia. The intersections of the fractures with sulphide rich beds in the greenstones are reported to be particularly favourable for silver mineralization.

A northerly trending diabase sill outcropping intermittantly approximately 4,000 feet to the west of the Roberts Lake showing dips eastward at 20° and presumably passes under the showing at a depth of 1,500 to 2,000 feet. Another prominent diabase sill outcrops on the east side of Angimayor Sound. Projected to the west this sill would lie a short vertical distance above the showings. The spatial association of the silver mineralization to the diabase, its overall mineralogy, its erratic distribution and locally bonanza type values are similar to most epigenetic vein type silver deposits.

CURRENT WORK AND RESULTS

In early May 1973, underground work commenced on the Ida Bay showing because diamond drilling was not considered suited to the erratic nature of the mineralization. A crew of 14 men was employed at the time the property was visited in early June.

A northwesterly directed decline was driven approximately 300 feet on a 15% grade. North and south drifts 30 and 40 feet long were driven on a sulphide zone in the greenstone. These drifts are approximately parallel to the strike of the layering and foliation in the greenstone. At the northern and southern ends of the drifts short cross cuts explore brecciated fractures for 65 feet and 40 feet. The northern drift follows a narrow central brecciated fracture 9 to 18 inches wide (observed by the writer) surrounded by a wider zone of greenstone brecciated to varying degrees and showing hematite alteration. The drift is understood to have been sampled across its full width but no sample data are available. A raise, on the fracture, was put through to surface from the north end of this drift.

A small stope was mined upwards towards surface trenching situated some 260 feet from the portal of the decline.

Systematic sampling records are not available for the underground openings but it seems that the erratic high grade pods were not encountered with sufficient consistency underground to warrant further work and in July 1973 the project was suspended in favour of underground exploration on the Roberts Lake showing three miles to the south.

Underground exploration on the Roberts Lake showing included a 400 foot decline driven eastward under the main showing and 60 feet of raising which encountered high grade mineralization.

A ten ton hand-sorted shipment from a small northeasterly trending drift driven along this mineralization averaged 4863.25 oz/ton Ag.

BEN
Terra Mining and Exploration Ltd.,
204, 8631 - 109th Street,
Edmonton, Alberta. T6G 1E8

Au
85 I/4
62°10'N, 113°54'W

REFERENCE

Henderson and Jolliffe (1937).

PROPERTY

BEN 1-9, T91688; T49096-100; T71174-175; A37400.

LOCATION

The BEN claims are on Great Slave Lake approximately 25 miles south-east of Yellowknife. They cover a part of the Beniah Islands, about 1½ miles from the mainland west of Drybones Bay.

HISTORY

BEN 1 was recorded in 1969 and BEN 2-9 in January 1973 for Terra Mining and Exploration Ltd. A quartz vein on the central claim, BEN 1 was trenched.

DESCRIPTION

Drilling results on the BEN claims, exploration on nearby claims, and published information (Henderson and Jolliffe 1937) indicate the claims largely underlain by Yellowknife Supergroup metasedimentary rocks.

A quartz vein outcropping on a 40 foot diameter island 10 or 20 feet from the shore of the larger island strikes northwesterly and re-appears on the northeast shore of the larger island. Some previous drilling northeastwards from the large island towards the smaller island is reported.

CURRENT WORK AND RESULTS

Two holes totalling 141 feet were drilled from the ice in January 1973 from near the eastern end of the large island to further test the quartz vein system. An east-northeast inclined hole discontinued at 40 feet and 101 foot hole directed towards 047° at -45° intersected grey-wacke with quartz vein between 86 to 98 feet. The maximum gold assay for the white to bluish quartz veinlets which contain minor pyrite was 0.02 oz/ton Au across 6 inches.

VAL
Bevco Mines Ltd.,
11628 - 149th Street,
Edmonton, Alberta.

Cu, Ag, Au
85 I/4
62°14'N, 113°59'W

REFERENCES

Henderson and Jolliffe (1941); Jolliffe (1942).

PROPERTY

VAL 1-4, A72616-19.

LOCATION

The VAL claims lie 76 miles southeast of Yellowknife, partly on the mainland and partly on small islands in Great Slave Lake.

HISTORY

The VAL claims were first recorded by Mr. C.C. Bevan in 1968. They were restaked in 1971 and again in May 1973 by C.C. Bevan for Bevco Mines Ltd.

DESCRIPTION

A narrow exposure of Yellowknife Supergroup greywackes along the shoreline of Great Slave Lake strikes through the claim group. Intrusive granite borders the greywacke to the north at distances of up to about 200 feet from the shore. Graded bedding indicates the greywackes have tops to the north-northeast. They are penetrated by irregular granite and pegmatite dykes of varying size. Lenses and irregular areas of quartz, in the pegmatite, contain blebs of coarse grained chalcopyrite and traces of native copper.

A line of shallow pits extending to the east-northeast have exposed minor amounts of chalcopyrite over about 80 feet. They lie 20 to 50 feet approximately from the granite contact on claim VAL 4 in the southwest part of the claim group.

CURRENT WORK AND RESULTS

Test pitting described above and five diamond drill holes totalling 304 feet were completed in 1973. Two holes were vertical and three inclined in a north to northwesterly direction. All range in length from 41 feet to 77 feet.

The results of this drilling are not reported but it is believed some gold and silver values were encountered, presumably in the quartz associated with the pegmatite dykes.

BALTIC
D. Nickerson,
Yellowknife, N.W.T.

Au, Ag, $W\text{O}_3$
85 I/6
62°22'N 113°09'W

REFERENCE

Lord (1951)

PROPERTY

Baltic 1-6, A47215-20.

LOCATION

The BALTIC group is on the west side of the north end of Hearne Lake, 40 miles east of Yellowknife.

PROPERTY

The BALTIC claims were (first) staked by D.F. Kidd in 1937. Numerous pits and trenches were dug to expose a quartz-feldspar porphyry dyke.

DESCRIPTION

The property is underlain by Yellowknife Supergroup greywackes cut by a northerly trending felsic dyke containing numerous small quartz veins, and veinlets sparsely mineralized with sulphides.

CURRENT WORK AND RESULTS

Visual analysis and assay results of samples taken by D. Nickerson suggest minor amounts of gold are associated mainly with arsenopyrite.

Assay results from 25 samples indicated low or nil gold. One selected sample highly mineralized with sulphides contained 0.252 oz/ton Ag. Two composite samples of 7 and 3 of the samples assayed for gold and silver contained small amounts of scheelite and assayed less than 0.20% $W\text{O}_3$.

As the precious metals are essentially confined to sulphide-arsenopyrite concentrations which are themselves sparsely distributed in the quartz veins, there is little likelihood that any tonnage of mineable grade material will be found in the quartz-feldspar dyke.

JAP
Anglo United Development Corp. Ltd.
2602 Royal Trust Tower
T-D Centre,
Toronto, Ontario.

Au, Ag
85.1/6
62°23'N, 113°07'30"W

REFERENCE

Henderson and Jolliffe (1941)

PROPERTY

JAP 1-8, A70429-36

LOCATION

The 8 JAP claims lie at the northeast end of Hearne Lake, 40 miles east of Yellowknife.

HISTORY

The ground has been covered by the FRANK, the RITZ and the TONG groups of claims. Five holes totalling 500 feet tested quartz veins in 1963. The JAP claims were staked in 1973.

DESCRIPTION

The JAP group is underlain by sedimentary rocks of the Yellowknife Supergroup described as slate and quartzite, which probably represent alternating coarse and fine units of a graded bedded sequence.

A number of trenches on JAP 5 claim and one 75 feet long, 2 feet wide and 2 feet deep, on JAP 1 claim expose narrow quartz veins which contain minor sulphides in quartz. Drilling on the property reportedly intersected narrow quartz veins containing pyrite and galena.

CURRENT WORK AND RESULTS

Geologists from Trigg, Woollett and Associates visited and assessed the claims in 1973. They reported one trench exposing a discontinuous 0.5 foot wide rusty quartz pyrite, galena, chalcopyrite bearing vein in black slate. A group of trenches on an island on claim JAP 5 exposed a 3.0 foot quartz vein containing minor pyrite. Grades obtained from 7 of 8 samples were 0.10 oz/ton Au or less with generally less than 0.5 oz/ton Ag. One assay from composite grab samples from a muck pile of vein material, ran 0.42 oz/ton Au and a 1 foot chip sample returned 1.12 oz/ton Ag.

Tonnage potential of such narrow veins would be limited, and in the absence of bonanza type grades, profitable exploitation is unlikely.

JOON
D. Nickerson
Yellowknife, N.W.T.

Au
85 I/7
62°26'N, 112°55'W

REFERENCE

Lord (1951)

PROPERTY

JOON 1-6, A47261-64; A739, 40

LOCATION

The JOON claims lie 47 miles east of Yellowknife and 15 miles east-erly from the end of the Ingram Trail, an all weather road leading east from Yellowknife. A disused winter road passes within a mile of the property.

HISTORY

The JOON claims staked in May 1973 cover showings known and worked on as early as 1937 (Lord 1951). Work since then suggest two mineralized veins with dimensions of 60 by 5.0 feet and 100 by 1.6 feet. Grades were reportedly high, well over 2 oz/ton Au, but indicated tonnages are low, (under 2,000 tons).

DESCRIPTION

The claims are underlain by Yellowknife Supergroup metasediments cut by narrow quartz veins and wider shear zones containing narrow discontinuous quartz veinlets.

The dense, blue-grey quartz encloses numerous fragments of sheared greywacke and small amounts of arsenopyrite, pyrite and traces of visible gold, mainly at the contact of the quartz and country rocks.

CURRENT WORK AND RESULTS

In September 1973, 5 holes totalling 174.5 feet in length were drilled to test the down dip extension of the quartz vein on JOON 2. Quartz veins and stockworks as much as 20 feet wide but averaging only a few feet were intersected. Grades were generally sub-ore. The best inter-section was approximately 2 feet of 1.0 oz/ton Au with a number of others approximating 0.3 oz/ton Au.

RUTH
Ice Station Resources Ltd.
2110 London House,
Calgary, Alberta.
T2P 0J8

Au
85.1/7
62°28'N, 112°34'W

REFERENCES

Henderson (1941); Lord (1951).

PROPERTY

RUTH 3, 4, 9, 10, 46634-35, 40-41.

LOCATION

The RUTH claims lie 58 miles east of Yellowknife and 27 miles north of Hearne Channel, Great Slave Lake, in the Francois Lake area.

HISTORY

Ice Station Resources obtained the right to explore the RUTH claims in March 1973 and upon expending at least \$25,000.00 by December 31, 1973, will be entitled to mine until December 31, 1977.

RUTH 3, 4, 9, and 10 claims were surveyed and are now held as Mineral Lease no. 2447, Lot no. 311, Group no. 965.

The RUTH claims were staked for Cominco in 1940. In 1942, a mining plant was built, a mill installed and mining and milling was carried on for about one month. Underground development includes a 230 foot deep inclined shaft with 50 feet of cross cuts, 178 feet of drifting, 36 feet of pockets, stations at 100 and 200 feet, and two slopes on the 100 foot level.

Ruth Gold Mines Ltd. leased the property in 1959, constructed an airstrip and cat road, de-iced, de-watered and rehabilitated the mine and did some mining. Nothing has been done since then and there is no underground plant or equipment. Surface development includes 558 feet of trenches, 20 X-Ray holes aggregating 1,501 feet, camp buildings and a 25 ton per day amalgamation mill.

DESCRIPTION

The property is underlain by thick beds of Yellowknife Supergroup greywacke that grade from coarse sandstone at the bottom to fine grained black well cleaved slate at the top. Near veins 1, 2 and 4, the beds strike about 010° and dip 75° to 85° east or are vertical forming a tight anticline, whose axial plane strikes about parallel with the beds and dips about 80° east. A few hundred feet south of No. 2 vein the fold hinge is exposed indicating an almost vertical plunge. Elsewhere the fold hinge is covered by drift or marked by a zone of broken rock cut here and there by irregular quartz bodies.

The greywackes are cut by sills or dykes of white weathering quartz-feldspar porphyry containing a little arsenopyrite and cut by transverse irregular veins of glassy quartz.

CURRENT WORK AND RESULTS

During 1973, Ice Station Resources Ltd. drilled 3,930 feet in 17 holes all to intersect the No. 2 vein in the vicinity of the inclined shaft. Good vein intersections were recovered from all but two of these holes and ten intersections showed visible gold. The core recovered from hole 14 contained good showings of visible gold but only returned 0.28 oz/ton Au. For grade calculations, Ice Station Resources Ltd. assumed a grade of 1.00 oz/ton Au for this intersection.

Detailed tonnage and grade calculations for the No. 2 vein, based on both drill intersections and Cominco's underground sampling indicate 2,447 tons containing 5,438 ounces Au for an average grade of 2.22 oz/ton Au.

ECL
F. Diamion,
P.O. Box 291,
Hay River, N.W.T.

Zn,
85 I/11
62°32'N, 113°17'W

REFERENCE

Henderson and Jolliffe (1941).

PROPERTY

ECL 1-4, A73570

LOCATION

The claims are on Terry Lake, 40 miles easterly of Yellowknife.

HISTORY

ECL 1-4 were staked in the spring of 1973 by F. Blanchut, B. Brown, N. Diamion and F. Diamion. The ground had previously been partly covered by BOB claims (T69538).

DESCRIPTION

The area is underlain by greywacke type sediments with small and localized northerly elongate mafic intrusions.

CURRENT WORK AND RESULTS

Two trenches were blasted into bed rock on ECL 1 claim. Pyrite and sphalerite were reported in the trenches.

Two short holes were drilled in a northwesterly direction west of the trenches on ECL 1.

Hole 1 is reported to be 55 feet long, hole 2, 31 feet long. No significant mineralization was intersected.

The ECL claims have lapsed.

ROS, KRW
Great Plains Development Co.
of Canada Ltd.
736 - 8th Ave. S.W.
Calgary, Alberta.

Pb
85 I/11
62°44'N, 113°12'W

REFERENCES

Fortier (1946); Henderson (1941); Henderson *et al.* (1970); Stockwell (1936).

PROPERTY

ROS 1-9, A73964-73; KRW 1-4, A73960-3.

LOCATION

Two groups of ROS claims adjoin the KRW claims. One group on the southeast, the other on the northwest. They lie 36 miles east of Yellowknife near Upper Ross Lake.

HISTORY

The ROS and KRW claims were staked in July 1973 and transferred to Great Plains Development Company.

DESCRIPTION

The contiguous ROS-KRW groups lie within the Cameron River belt of Archean supracrustal rocks which include rhyolite, andesite and agglomerate as well as nodular quartz-mica schists. A galena showing one foot by $\frac{1}{4}$ inch in size was found in an agglomerate unit. Calcite and galena occupy a small fracture.

CURRENT WORK AND RESULTS

The KRW and ROS claims have been prospected and mapped.

GLEN
J.R. Woolgar,
Ward 2, Pearson Hospital,
700 - 57 Avenue S.,
Vancouver, B.C.

Pb, Cu, Au
85 I/11
62°44'N, 113°16'N

REFERENCES

Henderson (1944); Henderson *et al.* (1973); Lambert, M. B., (1974).

PROPERTY

GLEN 1-12, A909-920.

LOCATION

GLEN 1-12 are on the Cameron River at its debouchment into Pensive Lake.

HISTORY

The GLEN group staked in 1970 covers ground held as the JOY claims by Zodiac Mining Ltd., but reports on previous work, if any, are not available.

Drilling included 3 holes, 356 feet on GLEN 11, in 1970, and 2 holes, 400 feet on GLEN 12 in 1972. The claims were obtained by D. Barr and transferred to Delphi Resources Ltd. in 1974.

Greywackes of the Yellowknife Supergroup underlie the claims. Quartz veinlets and stringers are locally abundant. Drill core from holes on GLEN 11 and 12 is reported to contain abundant galena and chalcopyrite with visible gold. No assays have been reported.

CURRENT WORK AND RESULTS

Separate inspections of the property by J.D. Murphy of DIAND and B.J. Price of Delphi Resources Limited failed to find evidence of the diamond drilling reported in 1970 and 1972. Significant mineralization was not found.

TIN, NIB, TT, TM
James S. Turner,
Yellowknife, N.W.T.

Cu, Au, Ag
85 I/11, 12, 14
62°40'N, 113°30'W

REFERENCES

Henderson and Jolliffe (1941).

PROPERTY

TIN	85 I/11
NIB	85 I/12
TT, TM	85 I/14

LOCATION

All 4 claim groups lie easterly of Yellowknife. TIN are on Tibbitt Lake at the end of the Ingraham Trail, the gravel highway leading east from Yellowknife. The TT group is on the southwest shore of Dome Lake, 40 miles northeast of Yellowknife. TM 1-3 are at the north end of the lake.

The NIB 1-6, on the north shore of Prelude Lake, 20 miles from Yellowknife, are easily accessible by road and water from the Prelude Lake campgrounds.

HISTORY

These claim groups cover Yellowknife Supergroup, greywacke type sediments with irregular discontinuous quartz veins, locally bearing significant amounts of visible gold. To date none of these deposits have been large enough to be profitably operated.

The TIN group has a northerly trending fracture zone locally containing abundant chalcopyrite in a silicified quartz cemented breccia. Low overall copper values were obtained from broken material collected from a series of trenches on this zone and assays for gold showed only trace amounts.

CURRENT WORK AND RESULTS

A 2 foot mineralized quartz vein on the NIB group was trenched. A grab sample from the vein material ran 0.708 oz/ton Au and 0.06 oz/ton Ag.

Old workings on the No. 1 zone TT group were sampled with extremely variable results that ranged from 14.1 oz/ton Au to nil. Ten of 16 samples ran .01 oz/ton or less. A number of holes were drilled and blasted on this zone. Samples were crushed and panned, others were assayed. Values ranged from 0.13 oz/ton Au and 19.87 oz/ton Ag to 7.46 oz/ton Au and 14.8 oz/ton Ag. These latter values may be from picked samples, or panned concentrates.

The TM 1-3 claims were staked at Dome Lake. Samples from pits on these claims assayed as much as 2.2 oz/ton Au and 6.5 oz/ton Ag.

A number of test pits were blasted into the silicified breccia exposing disseminated chalcopyrite. A small bulk sample was sent for testing.

HM
Hidden Lake Mines Ltd. (N.P.L.)
c/o F. C. Avery
Yellowknife, N.W.T.

Au
85 I/12
62°33'N, 113°37'W

REFERENCE

Henderson and Joliffe (1941).

PROPERTY

HM 1-12, 111166-68, N51084-92

LOCATION

The HM property lies on the north shore of the east end of Hidden Lake, approximately 28 miles east northeast of Yellowknife. The Ingraham trail, an all weather gravel road to Yellowknife, lies 7 miles south of the property.

Underground workings and a camp lie in the central part of the claim block on claims HM 2 and HM 3 respectively.

HISTORY

The property discovered and staked in the mid thirties has been allowed to lapse and restaked a number of times. In 1959 it was optioned to H. Wist and Associates, who did a small amount of drilling and drifted 120 feet from the bottom of a 69 foot shaft.

The property was then sold to First Northern Explorations Ltd., subsequently leased by F. Avery of Yellowknife in 1967 with G. Glick of Yellowknife acquiring an interest.

Underground workings and surface installations were refurbished in 1968, and a raise was driven from the south drift to surface.

The underground workings were sampled in 1968, and a small amount of ore from a raise off the south drift was milled and processed locally by amalgamation.

The camp comprises a bunkhouse, cookhouse and three warehouses. At the shaft site, apart from the headframe buildings, there are a hoistroom powerhouse, two mill buildings and a garage. The headframe is reported in poor condition.

DESCRIPTION

The southwest part of the claim block lies under Hidden Lake. The northwest part about 1½ claims, is underlain by granite. The larger eastern part of the block is underlain by Archean Yellowknife Supergroup greywackes that have been metamorphosed to quartz-mica and knotted cordierite schists. The sediments, from which the knotted schists are derived, through contact metamorphism by the Hidden Lake granite, are greywackes and slates.

A northerly striking vein exposed in trenches some 70 feet west of the shaft, the vein system is reported to be offset some 50 feet to the west by folding. Possibly the vein in the shaft area is continuous with the quartz veins exposed in trench about 300 feet to the northwest. A body of massive quartz occurs between the shaft and the north drift.

Eighty chip samples were taken from the underground workings in 1968 by Precambrian Mining Services Ltd. The average grade of a 3.3 foot thick mineralized zone in the south part of the south drift and the south raise was 0.74 oz/ton. When sampled, the raise extended an inclined distance of about 45 feet west of the south drift. The sampling did not locate gold mineralization elsewhere in the underground workings. Galena is reported associated with the gold bearing mineralization.

The zone exposed in the south drift is described as a five foot thick stockwork composed of 30% small quartz lenses.

A second northerly striking vein exposed at surface over 150 feet, lies 150 feet east of the underground workings.

CURRENT WORK AND RESULTS

In 1973, five inclined holes totalling 277 feet were drilled westwards towards and under surface trenches on the main vein to intersect it between the surface and the level of the north and south drifts. Holes 1 and 2 were sited 45 feet and 80 feet respectively southeasterly from the surface breakthrough of No. 1 raise and about 50 feet east of the surface trenching. Hole 4 lies 50 feet north-northwest of the shaft and hole 5, 40 feet to the north-northeast.

No sign of the quartz vein exposed by the trenches and underground workings, other than minor quartz veining, is visible in the drill core, which consists of schistose greywacke. Layering in the greywacke indicated a dip of 25° to 30° westward throughout the holes.

Hole No. 6 was sited to investigate a possible extension of the main vein 300 feet to the northwest. Minor thin quartz veins are the only sign of the down dip projection of the vein exposed in trenching west of the hole.

At the present time, sample data on this work has not been received.

AP
C. Vaydik,
Yellowknife, N.W.T.

Au, Ag
85 I/14
62°47'N, 113°12'W

REFERENCE

Henderson (1941)

PROPERTY

AP

LOCATION

The AP claims are on the Cameron River, downstream from Myrt Lake, 42 miles northeasterly of Yellowknife.

HISTORY

Gold is reported to have been discovered in the area by prospectors of Dome Mines Limited in 1938, on the adjacent WT group. In 1945, the Prospect Street Syndicate staked an extensive claim block including the area now covered by the AP claims. Apart from geological mapping at one inch to 1000 foot scale very little other work has been reported on the property.

DESCRIPTION

The AP claims lie along the western edge of the Cameron River greenstone belt. Mafic volcanic rocks are predominant in this belt, but on the claims felsic lavas, tuffs, and agglomerates are widespread. The western edge of the claims are underlain by Yellowknife Supergroup meta-sediments.

Bedding throughout the property trends uniformly 165° , and dips steeply east.

Two zones with potential mineral values occur in dacitic volcanics on AP 4. Both are presumably shear zones with as much as 10% small quartz lenses and minor disseminated sulphides and arsenopyrite. A few small pits expose material in these zones but practically no other work has been done.

CURRENT WORK AND RESULTS

In 1973, D. Nickerson examined the claims described the shear zones, and took 6 samples for assay, none of which contained more than a trace of gold and 0.04 oz/ton Ag.

MAG
Seaforth Mines Ltd.,
600 - 784 W. Pender St.,
Vancouver, B.C.

Au, Cu
85.0/3
 $63^{\circ}05'N$, $115^{\circ}26'W$

REFERENCE

Lord (1951)

PROPERTY

MAG 1-19

LOCATION

The MAG group is on Mosher Lake, 55 miles northwest of Yellowknife. Lake craft can reach Lajeunesse Bay on Russell Lake, 6 miles from the claims.

HISTORY

The Gold Island showing was found in 1938 by Alex Mosher. It was drilled in 1944, 1946 and 1947, but lapsed and was restaked recently by Seaforth.

DESCRIPTION

Diamond drilling outlined two quartz stockworks containing visible gold, and copper, zinc, lead, iron and arsenical sulphides. The sulphide bearing sections of the quartz stockwork were apparently not assayed.

The stockworks are in shear zones cutting across Yellowknife Super-group greywackes. A narrow volcanic belt strikes along the length of Mosher Lake and may be in proximity to the gold showings. The main zone strikes 210° , dips vertically and reaches a width of 20 feet.

CURRENT WORK AND RESULTS

G.G. Addie evaluated the property for Seaforth in 1973 and presented a comprehensive review of past work and results.

A traverse was made along the quartz stockwork, and magnetometer, VLF and geological data recorded. Magnetic and EM 16 results suggested an additional quartz vein southwest of those indicated by previous drilling.

MSSL
North Star Mines Ltd.,
Sam Otto,
Yellowknife, N.W.T.

Au, Cu, Pb
85 P/3
 $63^{\circ}01'N$, $113^{\circ}19'W$

REFERENCES

Fortier (1946); Henderson (1970); Moore *et al* (1951).

PROPERTY

MSSL 1-9, A7741-9.

LOCATION

The claims are in the Murray Lake area, 4 miles west of Gordon Lake and 48 miles northeast of Yellowknife. The Yellowknife-Camlaren winter road crosses Murray Lake a mile from the property.

HISTORY

The ground was previously covered by the BAIRN claims of Consolidated Mining and Smelting (Cominco). Considerable trenching and a shallow prospect shaft explored the property in the 1940's. The MSSL claims were

staked by Sam Otto of Yellowknife and obtained later by North Star Mines Ltd.

DESCRIPTION

Well bedded, strongly folded Yellowknife Supergroup sediments underlie the claims, but to the west contact metamorphism has produced nodular schists and hornfels.

Numerous quartz veins, as fracture and open space fillings, occur on the property. Most of the quartz is the dense blue grey variety, a common host of gold in this region. Silicification may have affected the rock within a few feet of the quartz bodies.

Small grains of gold and pyrite, chalcopyrite, arsenopyrite, galena and probably pyrrhotite have been recognized in the veins but rarely aggregate more than 1% of the volume. At least 16 gold showings have been reported on the property.

CURRENT WORK AND RESULTS

In 1973, an engineer's evaluation of the property by D. Nickerson was submitted for assessment credit. The work had been done the previous year. Three of the most promising gold showings were examined.

These showings, No. 1, 6, and 7 (presumably old Consolidated Mining and Smelting Co. Ltd. numbers) are described as follows.

No. 1 consists of many irregular quartz bodies and veins, one of which was traced for 80 feet. No. 6 is a body of quartz and silicified host rock 14 feet wide and 33 feet long within steeply inclined slates. Recent assays from a new trench on this zone indicated 0.20 oz/ton Au over 7 feet. All other assays were lower. No. 7 zone, on which the prospect shaft was sunk was poorly exposed at surface. Only a narrow gold-bearing quartz vein was traced for 20 feet.

As most trenches were filled with water or debris little sampling was carried out but assay plans believed to be results obtained by C.M. and S. are available.

SYN, VEN
Prosper Mines Ltd.,
A.F. Bernier, Jos. Wilkenson,
Yellowknife, N.W.T.

Au
85 P/6
63°16'N, 113°05'W

REFERENCES

Fortier (1946); Henderson (1970); Moore *et al.* (1951).

PROPERTY

SYN 1-42, A77448; VEN 1-12, A72121-32.

LOCATION

Bernier and Wilkenson prospected northeast of Gordon Lake, 50 miles north-northeast of Yellowknife. The winter road to Tundra Mines crosses the length of Gordon Lake, through the area prospected.

HISTORY

The area has a long history of prospecting and minor exploration efforts. Cominco prospectors explored the area in the 1940's and located and trenched most of the showings.

SYN 1-42 were staked in 1973 by Bernier and Wilkenson following a summer prospecting in the area.

The VEN group was staked in April 1973 at beginning of the prospecting season.

DESCRIPTION

Yellowknife Supergroup greywacke type sediments underlie the area. They contain many small generally discontinuous quartz veins that contain highly variable amounts of visible gold. Rusty zones are locally developed on iron sulphide rich lenses in the greywacke. These are probably sedimentary sulphide-iron formation, which occasionally contain low gold values.

There are numerous small pits and trenches in this area which was extensively prospected 30 years ago.

CURRENT WORK AND RESULTS

Nearly a dozen old pits were cleaned out and investigated.

A large gossan, 3 miles east of the north end of Gordon Lake was trenched and sampled. This is now covered by SYN 32 and 16 claims. A parallel gossan a mile to the east was also trenched and a third gossan 2 miles to the south was trenched, and pits inspected. These are on SYN 27, 25 and 20.

The VEN claims adjacent to the SYN group were investigated by D. Nickerson in 1973. Numerous samples were taken, but of 34 assays, 15 returned nil gold, and 13 others less than 0.1 oz/ton Au.

Samples taken by D.R. Hughes for the Resident Geologist's office gave similar sporadic values, but included the following, 0.424, 1.418, 0.476 and 2.016 oz/ton Au. Silver, copper lead and zinc are also present in some trenches. Trench 14 material assayed 2.016 oz/ton Au, 17.17 oz/ton Ag, 0.05% Cu, 5.69% Pb and 4.44% Zn.

SAM
Great Plains Development Co.
of Canada Ltd.,
736 - 8th Avenue, S.W.,
Calgary, Alberta.

Cu, Zn
85 P/7
63°16'N, 112°57'W

REFERENCES

Fortier (1946); Henderson (1970); Moore, *et al* (1951).

PROPERTY

SAM 1-17, A17439-54, A47480.

LOCATION

The SAM group lie 75 miles northeast of Yellowknife, 8 miles south of Brown Lake, and immediately to the west of Rick Lake.

HISTORY

The SAM claims were staked by W. Rossing in 1970 and transferred to Great Plains in August 1973. Five trenches were excavated by Rossing in 1970-71.

DESCRIPTION

The property is in the Cameron River belt of Yellowknife Supergroup volcanic rocks. Mafic to felsic volcanic rocks occupy the east side of the claims and nodular mica schists, metagreywacke underlie the area west of Sam Lake.

Massive pyrrhotite, pyrite, graphite, magnetite and minor chalcopyrite and sphalerite occur in widths up to 50 feet, but grades are low.

CURRENT WORK AND RESULTS

During 1973, Great Plains mapped the trenches on the east side of Sam Lake. Three EXT drill holes explored the main trench area intersecting massive sulphides mainly pyrite-pyrrhotite with minor amounts of chalcopyrite and sphalerite.

SAP, RAP
Anglo United Development Corp. Ltd.
2602 Royal Trust Tower,
Toronto Dominion Centre,
Toronto, Ontario

Au, Ag
85 N/1, N/8
63°13'N, 116°03'W
63°20'N, 116°15'W

REFERENCE

Lord (1951).

PROPERTY

RAP 1-6, A70423-28

SAP

LOCATION

The RAP claims are on the west side of Strutt Lake (also known as "E" Lake) 85 miles northwest of Yellowknife. The SAP claims are on the north shore of Slemmon Lake, 76 miles northwest of Yellowknife.

HISTORY

The SAP claims cover a gold-quartz prospect that has been staked at least 7 times including once as the SR group. Trenching and 4 diamond drill holes are reported.

The RAP claims were staked in 1972 by J. Pollock on ground previously recorded as the FARO (1946) and ART (1956). Nineteen trenches have been excavated on the claims.

Records of work done prior to 1972 are scant. Practically nothing is available in the Yellowknife Archives.

DESCRIPTION

Both RAP and SAP claims cover low grade, narrow and discontinuous gold-quartz veins and silicified zones in Yellowknife Supergroup greywacke.

On RAP 4, 5, rock trenches near the south claim boundary exposed the following; (1) grey silicified rock containing traces of sulphide, (2) quartz vein with traces of sulphide and (3) fractured greywacke with low sulphide. This material assayed (1) 0.02 oz/ton Au (2) Nil, and (3) 0.06 oz/ton Au.

Steeply-dipping north trending Yellowknife Supergroup metasediments underlie the Property. On SAP 2 and 3, slightly pyritiferous amphibolite bands as much as 2 feet wide, have a rusty weathered surface. A small, 10 by 15 foot gossan was noted in pyritic chlorite schist on SAP 4.

Several 2 to 3 inch wide flat-lying quartz veins containing pyrite and specularite are exposed in one pit. Core from 4 holes is stored on the property but contains no veins or mineralized sections.

CURRENT WORK AND RESULTS

Trigg Woollett and Associates assessed the properties in 1973. On the RAP 4 claim, 19 trenches and pits were located, all on rusty zones or narrow quartz veins. Samples were taken from 5 trenches, but it was not considered necessary to assay any of them as the veins are only ½ to 12 inches in width, discontinuous, and contain about 1% pyrite and 2% sericite.

All but one of 9 samples from the pits and trenches on the SAP group gave assays of less than 0.1 oz/ton Au, and 0.12 oz/ton Ag. A grab sample representative of 2.0 feet assayed 0.36 oz/ton Au and 0.14 oz/ton Ag.

JINGO
Baron's Oil Ltd.
907 Third Avenue, South
Lethbridge, Alberta.

Au
86 B/12
64°34'N, 115°32'W

REFERENCES

Lord (1942, 1951); McGlynn and Ross (1962); Stanton (1947);
Stanton *et al.* (1948); Tremblay *et al.* (1954).

PROPERTY

JINGO 1-17, A32792-99; A71339-46; N48799
G0 1, N67769

LOCATION

The JINGO group is situated two miles east of Arseno Lake, 150 miles northwest of Yellowknife. Shagory Lake in the northwest part of the claim group is accessible by float- or ski-equipped planes.

HISTORY

The property was staked in 1939 and Mercury Gold Mines Ltd. was formed to acquire the ground. Stripping, trenching and bulk sampling were carried out in 1939, 1941 and 1946 and numerous quartz veins were uncovered, some gold bearing. Four of these, reported to be the more promising, are known as the Nos. 1, 2 (Galena), 4, and 18 veins.

Between 1941 and 1946, 12,942 feet of diamond drilling was completed on the No. 1 vein. Bulk sampling of this vein is reported to have indicated 0.14 oz/ton Au across 5.8 feet over a length of 175 feet.

The DINGO claims at one time covered the area of the JINGO group.

DESCRIPTION

The greater part of the claim block is underlain by Archean Yellowknife Supergroup pillowed and mafic volcanic rocks with altered diorite and porphyry dykes. The No. 1, 2 and 4 veins strike northwesterly and have steep northeasterly dips. On the No. 4 vein, bulk sampling indicated 0.35 oz/ton Au over an average width of 1.25 feet for a length of 300 feet. Comparable values have been recorded over 240 feet on the No. 18 vein.

CURRENT WORK AND RESULTS

In 1973 vein no. 4 near Shagory Lake was blasted and a small amount of packsack drilling was done.

HOOD RIVER PROJECT
Ecstall Mining Limited,
Texasgulf Incorporated,
P.O. Box 175,
Commerce Court,
Toronto, Ontario.

Cu, Zn
86 H/15
65°54'20"N, 112°49'W

REFERENCE

Bostock (1967)

PROPERTY

JE 1-5, A75171-74, 79.

LOCATION

The JE claim lie about 8 miles west of Rockinghorse Lake, 225 miles north of Yellowknife.

HISTORY

Previous mineral exploration has not been recorded in this area.

DESCRIPTION

Only helicopter reconnaissance geology has been published for the region in which the JE claims are located. This work indicates that most of the claims are underlain by granitized supracrustal rocks intruded by granitic material. Pillowed basalt and lesser amounts of more felsic material occur on JE 5.

CURRENT WORK AND RESULTS

Radem, horizontal loop EM and magnetometer surveys were conducted on lines 400 feet apart over part of claims JE 1-5. Three weak *en echelon* conductors, concluded to be fault displaced segments of a once continuous zone, were found on the property. These are coincident with small gossans but are not considered to be indicators of economically viable sulphide bodies.

The claims lapsed in 1976.

TAKIJUQ LAKE PROJECT
Ecstall Mining Ltd.,
P.O. Box 175, Suite 5000,
Commerce Court,
Toronto, Ontario.

Cu, Zn
86 I/1, 2, 86 H/15
66°N, 112°40'W

REFERENCES

Bostock (1967); Craig et al. (1960).

PROPERTY

Prospecting Permit 296	86 I/2
HO 1-4, MO 1-18, HE 1-64, KK 1-4, GO 1-8, BO 1-13, RO, 1-4, MI 1-4	86 I/1
TA 1-4, MA 1-9	86 H/15

LOCATION

The Ecstall property lies 250 miles north of Yellowknife, east and southeast of the south end of Takijug Lake. The 1973 camp was situated on a small lake four miles northeast of the southern extremity of Takijug Lake.

HISTORY

The ground was acquired following geological reconnaissance and prospecting by company geologists in 1972. Little previous work was recorded in the area.

DESCRIPTION

Bostock (1967) shows the area to be underlain by Archean granitic to gabbroic intrusives, meta-sedimentary and meta-volcanics rocks. Proterozoic sediments of the Epworth Group and diabase dykes are also present, mainly west of Takijug Lake.

CURRENT WORK AND RESULTS

Reconnaissance and detailed geological and geophysical surveys were carried out on the property.

BEAR PROVINCE

The Bear Province forms a major part of the Coronation Geosyncline a Proterozoic belt surrounding all but the eastern border of the Archean Slave Province. Two distinct parts of the Bear Province are the Hepburn fold belt adjacent to the Slave Province and the Great Bear Batholith to the west.

Practically all the exploration in the province during 1973 took place in the Great Bear Batholith where the targets include veins, containing varying proportions of silver, bismuth, copper, and uranium and possibly related veins and pod-like pitchblende deposits.

Access to the properties in this area is by fixed wing aircraft as there are innumerable lakes in the area.

JN CLAIMS
BP Minerals Ltd.,
1980 Sherbrooke St. W.,
Montreal 109, Quebec.

U
86 C/12
64°37'15"N, 117°52'00"W

REFERENCES

Fraser (1958); Lang (1952); Lang et al. (1962); Little and Ruzicka (1970).

PROPERTY

JN 1-18, A76251-68.

LOCATION

The JN group is on Hidden Bay of Hardisty Lake, approximately 175 miles northwesterly of Yellowknife. The Rae-Edzo to Echo Bay winter road passes near the claims.

HISTORY

A group of 10 claims at Hidden Bay of Hardisty Lake was acquired by Gold-Uranium Exploration Limited, in 1947. Diamond drilling was done in 1947 and a radiometric survey in 1948. In 1952, the property was acquired by U.R. Mines Limited.

Stripping trenching and an airborne radiometric survey in September 1970, outlined additional anomalies.

DESCRIPTION

Proterozoic rocks of the Bear Province underlying the claims include a 2000 foot long giant quartz vein in feldspar porphyry near the contact with quartz monzonite. The giant quartz vein, like many in the western part of the Bear Province consists of a stockwork of quartz veins containing hematite and seams of pitchblende.

A chemical analysis of one sample was reported as 8.63% U_3O_8 .

CURRENT WORK AND RESULTS

Scintillometer readings were taken every 20 feet over an area measuring 400x1000 feet and the quartz dyke and its immediate vicinity was mapped at a scale of 1 inch to 200 feet.

The mineralization appears to be associated with a network of quartz-stringers developed along a 1000 foot length of the northeastern margin of the quartz vein. No exposed mineralization is reported along the massive margins of the vein.

KEN
Denison Mines Ltd.
20th Floor,
4 King St., West
Toronto, Ontario.

U
86° C/16, E/1
65° N, 116° 24' W

REFERENCES

Allan *et al.* (1973); Lord and Parsons (1952); McGlynn (1974).

PROPERTY

KEN 1-48, A72501-48.

LOCATION

The KEN claims are situated 189 miles northwest of Yellowknife.

HISTORY

The claims were staked in April 1973 for Denison Mines Ltd., to cover a uranium anomaly located by a lake sediment geochemical survey, (Allan *et al.* 1973).

DESCRIPTION

The claims are underlain mainly by granite gneiss and migmatite. with extensive paragneiss and biotite schist to the southwest and some altered rocks believed to be metavolcanics in the northwest.

CURRENT WORK AND RESULTS

Scintillometer prospecting, water and lake sediment sampling tested the KEN claims. A water sample taken from a stream on the border between KEN 19 and 20 contained 2.5 ppb U. The stream drains a lake from which sediment and water samples with highly variable uranium contents were obtained. The uranium contents of the lakes sediment ranged from 15 ppm to 130 ppm U.

Several locations with scintillometer readings above background were reported but all such anomalous areas were small. A rock sample taken at the location with the highest reading, 2600 c/s contained 0.03% U₃O₈.

A quartz stringer containing abundant pyrite and minor molybdenite was found.

MARION RIVER PROJECT
Getty Minerals Co. Ltd.
Suite 201, 10 King St., East
Toronto, Ontario.

U
86° F/6, 7, 9, 10, 11
65° 30' N, 117° 00' W

REFERENCES

Allan *et al.* (1973); Garrett (1973); Lord (1941); Lord and Parsons (1952); McGlynn (1974); Parsons (1948); Richardson and Charbonneau (1974).

PROPERTY

Prospecting Permit 282	86 F/6
Prospecting Permit 283	85 F/7
Prospecting Permit 284	86 F/11
HI 1-50, 51, A70751-800; A32791	86 F/9, 10
FES 1-146, A70801-939, A70746	86 F/10
OK 1-35, A71001-020, A70747	
KO 1-29, A34089, A32800, A700-107, 296, 750, 800	

LOCATION

The area is 225 miles north of Yellowknife and about 54 miles south-east of Port Radium.

HISTORY

Getty Minerals Company Ltd. acquired permits 282, 283 and 284 to cover a number of anomalies outlined by a reconnaissance hydrogeochemical survey of the region done by Getty in 1971. Geological mapping, ground radio-metric surveys, soil sampling and trenching began in 1972 and 261 claims were staked to cover additional hydrogeochemical anomalies.

Previously reported mineral occurrences in the immediate area include a Cu-W showing on the MEASIN group at Tommie Lake near Lever Lake, and a radioactive magnetite occurrence on the JACKPOT group near Hansen Lake.

DESCRIPTION

The holdings lie within the Bear Province and are underlain mainly by coarse to medium grained, porphyritic to massive granites and quartz monzonites of the Great Bear batholith. Minor amounts of syenite are present. About 20% of the area is made up of intrusive and extrusive feldspar-quartz porphyries which are rhyolitic to dacitic in composition. The extrusives are intruded by the younger granitic rocks. Major gabbro dykes have a northeasterly strike and are up to several hundred feet wide but smaller gabbro and diabase dykes have variable orientation. Three distinct fault trends north-west, north and northeast can be recognized in this region. Several of the northeast trending faults are discontinuously filled with stockworks of milky quartz.

CURRENT WORK AND RESULTS

During 1973, geological mapping at 4 inches to the mile, ground radiometric surveying, soil sampling of anomalies, trenching, and 673 feet of diamond drilling was carried out.

Numerous sub-economic pitchblende veins as much as one-half inch wide, fill widely spaced, discontinuous fractures in granite porphyries. The pitchblende is accompanied by hematite, calcite and minor quartz, chalcopyrite, pyrite uranophane and nickel-cobalt minerals.

OS, ZEB
Seaforth Mines Ltd.,
600 - 789 W. Pender Street,
Vancouver, British Columbia.

Cu
86⁰D/15
64⁰52'N, 118⁰35'W

REFERENCES

Kidd (1936); Thorpe (1966).

PROPERTY

OS 1-42, A38364-423; A38720-21; ZEB 1-20

LOCATION

The OS and ZEB claims lie on the south side of Hottah Lake, 210 miles northeast of Yellowknife, The winter truck route from Fort Rae to Echo Bay crosses Hottah Lake.

HISTORY

Seaforth Mines Ltd. staked and recorded the claims in June 1972 and conducted a ground magnetometer and geological reconnaissance survey the same summer. The area had previously been prospected for base metals by Cominco geologists.

DESCRIPTION

The claims are underlain by Paleozoic sediments, which are probably the same as the mid Ordovician succession mapped to the south by Norris (1965). Precambrian inliers occur in the general area, but are not known on the claim group where outcrop is limited to about 10% of the area mainly that around the margin of Hottah Lake.

The Palaeozoic rocks are flat dipping sandstone, shale, and silty bituminous dolostone. Several exposures of fractured bituminous dolostone containing chalcopyrite have been reported.

CURRENT WORK AND RESULTS

A geochemical soil survey in 1973 followed up a reconnaissance ground magnetic survey in 1972. A strong degree of coincidence between magnetic and soil copper anomalies was obtained.

HD CLAIMS

Duke Mining Ltd.
7107 - 83rd Street
Edmonton, Alberta.

Ag
86°E/9
65°34'N, 118°10'W

REFERENCES

Murphy and Shegelski (1972); Padgham *et al.* (1974); Parsons (1948).

PROPERTY

HD 1-58, T68701-58.

LOCATION

The HD claims are located approximately 240 miles northwest of Yellowknife. They can be reached by winter road or barge in summer, via Great Bear Lake and the Camseil River.

HISTORY

The claims, staked in 1968 by H. Arden and J. Soldat were transferred to D.E. Arden, who optioned them later in 1968 to D.E. Snyder, H. S. H. Stanfield, J. Myers, A. Harter and L. Mayers. In September 1968, the claims were assigned to Republic Mining Ltd. who optioned them to Duke Mining Ltd. in September 1970.

Between 1969 and 1970, a geological map and 5 diamond drill holes were completed. Three of the holes sited at approximately the same location on claim HD 8 were of about equal length totalled 449 feet and were directed southwest to west to explore the No. 8 Showing which lies just north of a small lake. Two inclined holes totalling 391 feet were drilled towards the northwest on the Main Showing which is located on HD 44, just south of a lake known locally as "Black Bear Lake". The best assay recorded, 1 oz/ton Ag and 1.89% Cu over 2 feet, is from the latter showing.

A weak conductor was defined by vertical loop, EM and magnetometer surveys carried out in 1971.

DESCRIPTION

The HD claims are underlain by Lower Echo Bay Group volcanic rocks, which are mainly of felsic composition with minor greenstone. Biotite granite and syenite bound the one mile wide volcanic belt on the south and north sides respectively. A sample from the main showing which is a carbonate vein in

tuff near the granitic contact assayed 22.26 % Bi, 1.95% Co, 2.18% Cu and 0.2 oz/ton Ag. A sample from a second showing on HD 8, assayed 0.05% Bi, 1.12% Co, 0.54 oz/ton Au and 0.7 oz/ton Ag. The assays suggest a mineralogy similar to that of the other vein type deposits in the Camsell River area.

The main HD 44 showing is located at $65^{\circ}34'12''\text{N}$, $118^{\circ}10'40''\text{W} \pm 150'$. The HD 8 showing is located at approximately $65^{\circ}35'04''\text{N}$, $118^{\circ}07'08''\text{W}$.

CURRENT WORK AND RESULTS

A 2900 foot 9 hole diamond drilling program tested the main showing in July and August 1973. Six holes drilled northward to test the showing between grid lines 32 and 35 west varied in depth from 300 to 500 feet and in inclination from -45° to -60° . Three holes were drilled at inclinations of -45° to -60° in an easterly direction from one set up.

Felsic volcanic and granite rocks were encountered in the core and much hematite is present locally. Assays were generally low; the best being 0.02 oz/ton Au, 2.12 oz/ton Ag, and 0.03% Cu over 7 feet in hole No. 6 which was drilled northward on line 35W.

MJ
Seaforth Mines Ltd.
600 - 789 W. Pender Street
Vancouver, British Columbia

Cu
 $86^{\circ}\text{F}/12$
 $65^{\circ}34'\text{N}$, $117^{\circ}57'\text{W}$

REFERENCES

Kidd (1936); Lord and Parsons (1952); Padgham *et al.* (1974).

PROPERTY

MJ 1-19, T66467-T66483.

LOCATION

The property lies about 240 miles northwest of Yellowknife, and two miles south of the Terra Mines airstrip.

HISTORY

The MJ claims were staked by M. Brezinski in July 1964 and optioned to Conwest Exploration Company Ltd. in June 1969, who carried out a geological evaluation in June and July 1970. The option was not exercised and later the claims were optioned by Seaforth Mines in December 1972.

Prior to 1973, the only physical work on the property was a small amount of pitting and trenching.

DESCRIPTION

The MJ claims are underlain by Aphebian Echo Bay Group volcanic rocks. Andesites underlie most of the claim block. Some northeast striking dykes of porphyritic granite have been mapped mainly in this northwestern portion of the claim block. On the remainder of the claim block, various types of feldspar porphyry, with minor feldspar porphyry breccia are locally exposed. These are probably hydrothermally altered andesite porphyry as many contain well preserved amygdules.

Where relatively unaltered as in the centre of the claim block, the porphyry consists of about 30% greenish white feldspar phenocrysts usually showing some degree of alignment and averaging about 1/3 to 1/2 inch in length. Patches of andesite have been noted within the general area underlain by feldspar porphyry. Where copper is present, the porphyry is much fractured and shows pink hematite alteration, silicification and locally chloritic alteration. Pyrite, pyrrhotite and chalcopyrite is associated with fine fractures and, to a lesser extent, disseminated through the rock.

The southward projection of the northeasterly trending Smallwood Fault coincides with a topographic depression crossing the center of the property. About 1000 feet to the east in the center of the claim group, a lineation visible on airphotos lying subparallel to the fault converges with it towards the south. An easterly trending fault or fracture intersects the northeasterly trending structures 1000 to 1500 feet northwest of the shore of Smallwood Lake.

Most of the copper seen on the claims lies in the region of these fracture intersections.

CURRENT WORK AND RESULTS

IP, soil, and ground EM and magnetometer surveys in 1973 identified a vertical loop EM conductor and a roughly coincident weak magnetic anomaly over the southward projection of the Smallwood Fault. The IP survey outlined three anomalies.

TOM, DOT
Denison Mines Ltd.
20th Floor,
4 King St. W.,
Toronto, Ontario.

U
86° F/8
65°16'N, 116°12'W

REFERENCES

Allan, *et al.* (1973); Lord and Parsons (1952); McGlynn (1974); Richardson and Charbonneau (1974).

PROPERTY

TOM 1-30, A72351-380;
DOT 1-42, A72349-81.

LOCATION

The TOM group is situated 204 miles northwest of Yellowknife and 8 miles southwest of Ross Lake. The DOT group is nearby on the Rob River which flows through the southeast corner of the claim block.

HISTORY

The claims were staked in April 1973 for Denison Mines Ltd., to cover a lake sediment uranium anomaly located by regional geochemistry (Allan *et al.* 1973).

DESCRIPTION

The TOM claims are underlain by granite gneiss and migmatite with lesser amounts of paragneiss and schist. In the southern part of the claim group, schist and paragneiss predominate, but granite gneiss is more common in the north. A small amount of younger sedimentary rock, mainly chert breccia on TOM 14 may be part of the Aphebian Snare Group.

Strong linears strike northeast across the western part of the property.

Similar rocks underlie the DOT group. Gabbro cuts the rocks in the northern part of the block. The gneisses strike northwesterly and dip vertically whereas the sediments exhibit varying strikes with dips ranging from vertical to horizontal.

CURRENT WORK AND RESULTS

The TOM and DOT groups cover a lake sediment uranium anomaly located by a regional survey (Allan *et al.* 1973). The 1973 work of the TOM claims failed to find evidence of this anomaly.

A fresh red intrusive granite on TOM 9 and 10 has a much higher radioactive background than the surrounding rocks, probably because of a higher potash feldspar content.

Small amounts of pyrite, pyrrhotite and copper staining were encountered.

Similar late granite on the DOT claims gave high readings but the highest was obtained over a small pegmatite dyke on DOT 8. No radiometric anomalies attributable to economic uranium concentrations were reported.

Eleven water samples contained less than 0.5 ppb U. A sediment sample considered a near duplicate of a sample reported to contain 65 ppm U by Allan (*et al.* 1973) returned only 2 ppm U but a sample from the eastern end of the lake returned 25 ppm U.

Base metal sulphides, galena, sphalerite, and chalcopyrite, in that order of abundance were found in frost heave scattered over an area 20 by 5 feet. The sulphides are in white to blue smoky quartz and in a silicious slightly gneissic rock. Six grab samples averaged 0.01 oz/ton Au, 2.55 oz/ton Ag, 0.3% Cu, 1.5% Pb, and 0.58% Zn. Two additional samples gave slightly less silver but similar gold values. Base metals were not reported.

The lake to the west of the showing contains anomalous amounts of copper, lead, zinc and uranium. A swamp west of that lake could conceal additional mineralization.

ICE, A, LEAH, BEL
Terra Mining and Exploration Ltd.,
8631 - 109 Street,
Edmonton, Alberta.

86°E/9
65°36'N, 118°01'W

REFERENCES

Murphy and Shegelski (1972); Padgham *et al.* (1975).

PROPERTY

ICE 3-8, A37954-9;
A 3-6, 13, 16, N82282-5, 92, 93;
BEL 1; LEAH 1, A37999.

LOCATION

The ICE claims cover part of the tip of a rocky point projecting into Rainy Lake. The A, BEL, and LEAH claims lie on the Terra Peninsula which extends into the Camsell River, forming part of the southern shore of Rainy Lake.

All the claims are accessible by barge from Great Bear Lake.

HISTORY

The ICE claims were staked in 1972 by C.A. McLeish and transferred to Norex Resources later that year. Norex recorded work in 1972, for which no records are available, and transferred an interest in the claims to Terra in 1973.

The claims on Terra Peninsula are part of the holdings of and adjacent to the Terra Mine, and have had a long and involved history which has been described in Padgham *et al.* (1975). The A claims were staked in 1966 and acquired by Terra Mines somewhat later.

Both claim groups were explored as long ago as the early 1930's.

DESCRIPTION

The claim groups are underlain mainly by Echo Bay Group porphyritic andesite with sandy tuff interbeds. A massive, fine grained mafic-diorite underlies the northwestern edge of the ICE claims and thin irregular granite porphyry dykes cut the andesite. Intrusive syenite intrudes the Echo Bay Group along the south edge of the Terra Peninsula.

CURRENT WORK AND RESULTS

The geology of the ICE group was mapped at 1 inch to 300 feet. Small patches of gossan are developed over pyrite concentrations in the andesite porphyry, particularly near granitic intrusives. Veins and veinlets of quartz and carbonate containing minor amounts of hematite, magnetite, pyrite, chalcopyrite, and bornite were noted mainly on ICE 6. A set of old pits were found on a copper showing near the lake shore.

The main work on the Terra Peninsula claims during 1973 comprised Ronka EM-16, VLF and scintillometer surveys to extend the area covered by such surveys in 1971. A number of EM and radiometric anomalies were located.

STOAT

R.M. Bentley and Associates,
709 - 1460 Barclay Street,
Vancouver, B.C.

86°F/12
65°36'35"N, 177°55'W

REFERENCES

Murphy and Shegelski (1972); Padgham *et al.* (1974).

PROPERTY

STOAT 5-18, A32851-64.

LOCATION

STOAT 5-18 claims lie along the southeast shore of the Camsell River approximately one mile north of the Norex gravel airstrip.

HISTORY

The area has a long history of prospecting and exploration for silver-copper-bismuth vein type deposits. The STOAT claims were staked in 1971 by H.J. Crowe, who transferred them to R.M. Bentley. H.A. Sears became owner of the property in September 1973.

DESCRIPTION

Intrusive coarse grained massive syenite and granodiorite (5d and 5c Padgham *et al.* 1974) underlie most of the claim area. Minor xenoliths of altered supracrustal rocks caught up in the intrusive may be sparsely mineralized with magnetite, pyrite and chalcopyrite.

Northeasterly trending faults including the Smallwood fault (*ibid*) cross the claims and locally may be the loci of giant quartz veins, but except for minor chalcopyrite showings, such veins are rarely mineralized in the

Camsell River district.

CURRENT WORK AND RESULTS

A 3,000 foot baseline was cut and 3,000 foot long north-south cross-lines were turned off every 100 feet. Some shallow trenching and blasting on volcanic remnants in the granodiorite and on a quartz-carbonate vein exposed traces of sulphides.

Narrow quartz veins trending east of north were traced for some hundreds of feet. Minor associated magnetite, pyrite and chalcopyrite was noted in these veins. A northeasterly trending quartz carbonate vein on STOAT 16, varying from 8 inches to 5 feet in width, and traceable for 400 feet, has minor chalcopyrite and pyrite associated with it. As this vein trends sub-parallel to most of the silver bearing veins, it may be of more importance than the remainder of the mineral showings on the property.

LEN, CBB
Port Syndicate
Joseph Gillham
Portland, Oregon.

Ag
86 F/13
65°59'37"N, 117°48'W

REFERENCES

Lord and Parsons (1952)

PROPERTY

LEN, 66857; CCB, A72475.

LOCATION

The LEN fraction lies on the north side of Contact Lake, 9 miles southeast of Port Radium.

HISTORY

A large block of claims, the CONTACT group was staked in the area in 1931 by T. Creighton and others for Northern Aerial Explorations Limited. A 25 ton/day mill operated on the property from 1936 to 1939. Tailings from this mill were deposited on what is now the LEN and SAM 5 claims.

Further development on the property between 1944 and 1949 appears not to have any bearing on the LEN fraction.

DESCRIPTION

The claim is probably underlain by Echo Bay group volcanic rocks.

CURRENT WORK AND RESULTS

A transit-stadia survey and sampling of the tailings pile in 1973 by W.G. Knutsen of Precambrian Mining Services showed 2,264 tons of material averaging 27.48 oz/ton Ag.

Samples were taken at 9 locations with a 4 foot soil auger to establish the thickness of the blanket of tailings and to obtain about 10 lbs. of material from each site for assay.

DY-DEE

R.A. Lees,
4003 Bow Rd,
Victoria, B.C.

C. Molholm,
6705 Pat Bay Hgwy.
Victoria, B.C.

86°K/2
66°08'N 116°39'W

REFERENCE

Hoffman and Bell (1975); Hoffman *et al.* (1976).

PROPERTY

DY-DEE 1-15, A72630-45

LOCATION

The claims are on the southeast shore of Uhlman Lake, east of Conjurer Bay of Great Bear Lake, approximately 250 miles northwest of Yellowknife.

HISTORY

Lees and Molholm prospected around Uhlman, Cruikshanks and Paula Lakes, and the eastern part of Conjurer Bay between May and mid July of 1973 and staked the 5 DY-DEE claims on silver-cobalt showings.

The claims lapsed in February 1976.

DESCRIPTION

The area prospected is within the western part of the Great Bear Batholith and granitic rocks predominate. Minor mafic, (gabbro and diabase) to felsic (quartz and quartz feldspar porphyry) dykes cut the granites. Andesitic and rhyo-dacitic volcanics occur in the area.

CURRENT WORK AND RESULTS

Lees and Molholm noted disseminated chalcopyrite and pyrite in a number of places. They located the DY-DEE group to cover silver-cobalt-bismuth-copper and molybdenum-copper vein type showings. A silicified zone 2 to 10 inches wide with cobalt bloom locally on weathered surfaces was traced over a short distance.

NAHANNI DISTRICT

The NAHANNI DISTRICT GEOLOGIST monitored exploration through the Cordilleran Province and in adjacent parts of the Interior Plains immediately to the west.

Exploration in the Cordillera, at a low ebb prior to 1972, increased tremendously following Canex-Placer's Howards Pass lead-zinc discovery announced in late 1972. Further increases resulted from the widespread search for carbonate hosted lead-zinc deposits in the MacKenzie Mountains. Lead-zinc exploration is tapering off (1975-76) but will be replaced by extensive copper exploration in Proterozoic strata of the MacKenzie Arch.

As the bulk of the exploration reported in 1973, took place in three fairly restricted areas, Cantung-Flat River, Howards' Pass, and Godlin Lakes location maps (Figures 8, 9 and 10) and summaries of access, references and general geology are provided for these districts.

RINO
W.L. Andrew
Port Ludlow,
Washington, U.S.A.

W, Mo
95°E/2
61°10'N, 126°38'W

REFERENCES

Gabrielse *et al.* (1973).

PROPERTY

RINO 1-16

LOCATION

The RINO group is near East Skin Boat Lake, 80 miles southeast of Tungsten. East Skin Boat Lake is suitable for aircraft operations.

HISTORY

The claims were staked to cover an area of scheelite bearing skarn. By 1976, the claims had lapsed.

DESCRIPTION

Lower Paleozoic limestone, volcaniclastic sediments and volcanics on the property are intruded by granodioritic plutons which have formed skarns in which minor tungsten and molybdenite occurs in quartz and epidote filled fractures.

CURRENT WORK AND RESULTS

A base line was run from the central northerly trending claim with lines turned off it every 100 feet. Ronka EM-16, VLF readings and B-horizon soil sampling, surveyed 3.8 miles of grid lines. Copper, lead, zinc, molybdenum, silver and tungsten assays were determined on the -80 mesh fraction of the soil samples by atomic absorption.

Two conductors were located which are locally coincident with high soil values for copper molybdenum, zinc and tungsten.

BRALORNE PIONEER MINES LTD.
320 - 355 Burrard Street,
Vancouver 1, B.C.

Pb, Zn, Ag
95 E/12
61°32'N, 127°34'W

REFERENCES

Gabrielse *et al.* (1965)

PROPERTY

GRIZZLY 1-15, N34637-15.

LOCATION

The 15 GRIZZLY claims are located 100 miles northeast of Watson Lake on the Yukon-NWT border.

HISTORY

The 15 GRIZZLY claims were staked in 1965 on a showing believed known some years earlier. No previous staking or physical work was reported on this area. Geological mapping done in 1966 held the claims in good standing until 1967. They lapsed in 1968. As this work has not previously been described, it is included here.

DESCRIPTION

This area lies within the Selwyn Basin, a sequence of northwest striking Helikian to Mississippian deep water clastics and carbonates which have been folded, faulted and intruded by Cretaceous quartz monzonite stocks. The claims are underlain by Upper Cambrian wavy banded silty limestone (Units 18 and 35 respectively, Gabrielse *et al.* 1965) intruded by quartz monzonite.

CURRENT WORK AND RESULTS

A geological survey (1966) of the property determined that the mineralization is confined to small portions of pyroxene-epidote-garnet skarn marked by gossans. Pyrrhotite and pyrite are common and varying amounts of galena, sphalerite and minor chalcopyrite make up the balance of the sulphides. The

highest grade obtained from grab samples taken from the mineralized zones was 5.18% Pb, 6.90% Zn, 0.02% Cu and 0.3 oz/ton Ag.

Newmont Mining Corporation
of Canada Limited,
Suite 750 - 3 Lombard Place,
Winnipeg, Manitoba. R3B 0Y4

Pb, Zn
95°E, L
62°30'N, 127°45'W

REFERENCE

Gabrielse *et al.* (1973).

PROPERTY

General Exploration.

HISTORY

Newmont conducted regional exploration over a portion of the Mackenzie Mountains during the 1973 field season but no claims were staked.

LOCATION

The area lies between Grizzly Bear Lake and Glacier Lake approximately 25 miles northeast of Tungsten. Grizzly Bear and Glacier Lakes are accessible to fixed-wing float-equipped aircraft.

DESCRIPTION

The area straddles the geological boundary between the Selwyn and Mackenzie Mountains. Cambrian to Devonian sediments have been folded into a northwesterly striking series of anticlines and synclines which are intruded by Cretaceous quartz monzonite and granodiorite stocks in the southwestern portion of the region. A carbonate-shale facies change trends northwesterly through the Grizzly Bear Lake area. The Manetoe Formation, a thin unit of coarse-grained recrystallized dolostone, outcrops along this paleoshelf.

CURRENT WORK AND RESULTS

Stream sediments in the Glacier Lake and Grizzly Bear Lake areas were sampled during June and July, 1973. Approximately 2,500 samples, taken at 1,000-foot intervals along most of the stream valleys, were analysed for lead and cadmium.

Several cadmium anomalies were traced to iron oxide that had been deposited in stream beds from seepages originating in pyritiferous shales. Minor galena and sphalerite found in the survey areas was not sufficient to sustain economic interest.

PROSPECTING PERMITS 303-307
Union Oil Company of Canada Limited,
P.O. Box 999,
Calgary, Alberta.

Pb, Zn, Cu
95 F/9; J/4, 12, 13; K/7
62°00'N, 124°00'W

REFERENCES

Douglas and Norris (1960, 1961).

PROPERTY

Prospecting Permit 303	95 F/9
Prospecting Permit 304	95 J/4
Prospecting Permit 305	95 J/12
Prospecting Permit 306	95 J/13
Prospecting Permit 307	95 K/7

LOCATION

The permit areas are located west of the Mackenzie River within a 50 mile radius of Camsell Bend. Fixed-wing aircraft can land on many lakes in the area.

HISTORY

The permits were acquired in 1973 to cover favourable Devonian carbonate formations. Although a few mining companies have explored near the permit areas, much of the local geological work has been done by oil companies during their search for hydrocarbons.

DESCRIPTION

The area lies along the eastern side of the Mackenzie Mountains and is underlain predominantly by Cambrian to Devonian dolostone, shale, limestone and sandstone. Of particular interest is the Middle Devonian Manetoe Formation, a coarse-grained dolostone.

CURRENT WORK AND RESULTS

Trigg, Woollett and Associates, under contract to Union Oil, sampled stream silts and prospected the permits and surrounding areas. Lead, zinc and copper was found but details have not been reported.

PROSPECTING PERMIT 287
Ecstall Mining Ltd.
P.O. Box 175,
5000 Commerce Court West,
Toronto, Ontario. M5L 1E7

Pb, Zn, Cu
95 F/8
61°20'N, 124°10'W

REFERENCE

Douglas and Norris (1960).

PROPERTY

Prospecting Permit 287

LOCATION

The centre of the area lies north of the Nahanni River, 100 miles west of Fort Simpson.

HISTORY

Penarroya Canada Ltee prospected the area during 1968. Copper-lead-zinc were found in a quartz vein near Lafferty Creek but no claims were staked. Texasgulf (Ecstall Mining Ltd.) prospected and did geochemistry in 1971. Favourable results led Texasgulf to obtain the Prospecting Permit.

DESCRIPTION

The permit area lies along the eastern side of the Mackenzie Mountains and is underlain by Devonian dolostone, limestone, shale and sandstone. Of particular interest are Middle Devonian Arnica dolostone, Manetoe dolostone, and Nahanni limestone (units 16, 18 and 22 respectively, Douglas and Norris, 1960). Dips are relatively gentle resulting in wide, low amplitude folds.

CURRENT WORK AND RESULTS

Detailed prospecting and a stratigraphic study in the area located numerous small Pb-Zn-Cu occurrences in quartz-calcite filled vugs within Devonian dolomite.

Two main occurrences of lead-zinc were reported, one near the junction of a small stream and Lafferty Creek, Forks showing, and another, four miles south, the DK showing. The Forks showing contains sphalerite and minor galena scattered throughout small breccia zones and quartz-calcite filled vugs in a section of Arnica Formation between 900 feet and 1300 feet below the Manetoe Formation contact. Mineralized pods have been traced discontinuously along this unit. The DK showing contains sphalerite masses up to 8 inches thick and minor galena in a two foot thick brecciated bed of grey dolomite cemented by quartz and calcite. The brecciated zone, located in the Arnica Formation, 200 feet below the Arnica-Manetoe contact contains mineralized pods that have been traced discontinuously for half a mile to the south. None of the showings were considered of economic significance and the permit was relinquished.

LOU CLAIMS
Cominco Ltd.,
200 Granville Square,
Vancouver, B.C.

Pb, Zn, Cu
95 J/13
62°53'N, 123°45'W

REFERENCE

Douglas and Norris (1961)

PROPERTY

LOU 1-20, A71701-20.

LOCATION

The LOU claims are 26 miles south of Fort Wrigley and 100 miles northwest of Fort Simpson.

HISTORY

LOU claims 1-20 were recorded in March 1973 to cover mineralization found by prospecting in 1972.

DESCRIPTION

The LOU group lies within the Franklin Mountains which formed along the eastern front of the Mackenzie Mountains. The claims are situated along a north striking ridge of Middle Devonian shale and carbonate, thrust faulted over Upper Devonian shale, and are underlain by Middle Devonian Nahanni Formation limestone (unit 17, Douglas, and Norris, 1961) which has been folded by northwest striking and northwest plunging anticlines and synclines. A northwest trending bifurcating fault crosses the property.

CURRENT WORK AND RESULTS

Detailed prospecting, geological mapping and rock sampling on the claims during 1973 located numerous lead, zinc and copper occurrences in bed-rock and float. Galena, sphalerite, minor tetrahedrite and sparry calcite fill vertical fractures on the flanks of local fault zones. Galena and sphalerite were also found as matrix in fault breccias and as disseminations within Nahanni Formation limestone. Silicification and dolomitization are commonly associated with the mineralization. A channel sample from one showing assayed 0.68 oz/ton Ag, 0.19% Cu, 4.9% Pb and 16.9% Zn over 18.5 feet.

FB, FRY
Cominco Limited,
200 Granville Square,
Vancouver 2, B.C.

Pb, Zn, Ag
95 0/4
62°15'N, 123°35'W

REFERENCE

Douglas and Norris (1963).

PROPERTY

Prospecting Permit 273 95 0/4
FB, T95173; FRY 1-37, A35801-37.

LOCATION

Permit 273 is located on the west bank of the Mackenzie River and includes Fort Wrigley on its northeast corner. Thus, parts of the area can be reached by boat from the river but rotary winged aircraft are more convenient.

HISTORY

The LEO claims (83508) were staked in the area by L. Norwegian in 1967 to cover lead-zinc float found near the mouth of the Wrigley River. A stream sediment geochemical survey by Giant Yellowknife Gold Mines tested the lower reaches of the Wrigley River but anomalies were not found. Cominco acquired an option on these claims and then staked the FB claims in August, 1970 to cover lead-zinc showings found by their prospectors earlier that summer. Trenching and continued prospecting in 1971 extended the mineralized zone and Cominco staked the FRY claims and obtained Prospecting Permit 273 covering 95 0/4.

An IP survey of part of the FRY group in 1972 was not effective because of bituminous limestone and rugged terrain. Five diamond drill holes totalling approximately 850 feet tested this zone and although lead-zinc mineralization was found, the intersections were reportedly narrow and of low grade. Another diamond drill hole was collared on the BOURNE showing but freezing conditions permitted only 84 feet of drilling.

DESCRIPTION

The properties lie along the eastern edge of the Mackenzie Mountains. A north to northeasterly trending ridge which is divided into three sets of hills on its northeastern extension is the main area of interest. The ridge is the crest of an anticline (Figure 7b) and small sinkholes and solution caves are common along its length. The western part of the ridge is underlain by Middle Devonian Nahanni Formation limestone dipping 30° to 40° to the west. This limestone is massive, black, fossiliferous, argillaceous and has a fetid smell when freshly broken. The base of the Nahanni Formation is marked by a one foot thick silty laminated limestone and is underlain by Headless Formation shale which is relatively thin in this area and usually poor exposed. The eastern part of the ridge is underlain by Arnica Formation dolostone which dips steeply to the east. A north to northeasterly trending fault,

the Camsell Thrust, (Figure 7a) located along the east side of the ridge has brought Middle Devonian sediments (units 17, 16 and 11 of Douglas and Norris, 1961) into contact with Upper Devonian shales siltstones and limestones (unit 25, *ibid*).

Primary galena and sphalerite with secondary smithsonite and cerussite occur in fracture zones striking parallel to the fold axis, (Figure 7c).

At the BOURNE showing, massive lenses of galena occur along the western edge of a fracture zone which is marked on surface by a 60-foot wide, northerly trending gully between two ridges. Patches of coarse crystalline calcite are found within this fracture zone and silicification and dolomitization are common within 10 feet of it. Small euhedral crystals of galena which weather out on exposed surfaces are disseminated in the rock along the fractures and yellow, circular shaped blebs of generally weathered and friable sphalerite occur locally. Unweathered samples of sphalerite were seen but are generally rarer than fresh galena.

This primary mineralization is also reported along the bedding of the limestone and is suspected to occur within the main fracture zone. This could not be substantiated because drill core recovery has been poor in this zone. Smithsonite and cerussite a secondary type of mineralization occurs along fractures in the Nahanni Formation limestone where it occurs parallel to the fracture walls and in some instances, cross-cut the limestone bedding. Elsewhere, it is botryoidal and has the appearance of a gnarled root hence the name "ROOT" Showing. Secondary zinc is rusty brown or in places deep red or yellow. Small blebs of galena and sphalerite are disseminated within the smithsonite-cerussite mineralization and *vice versa*.






CURRENT WORK AND RESULTS

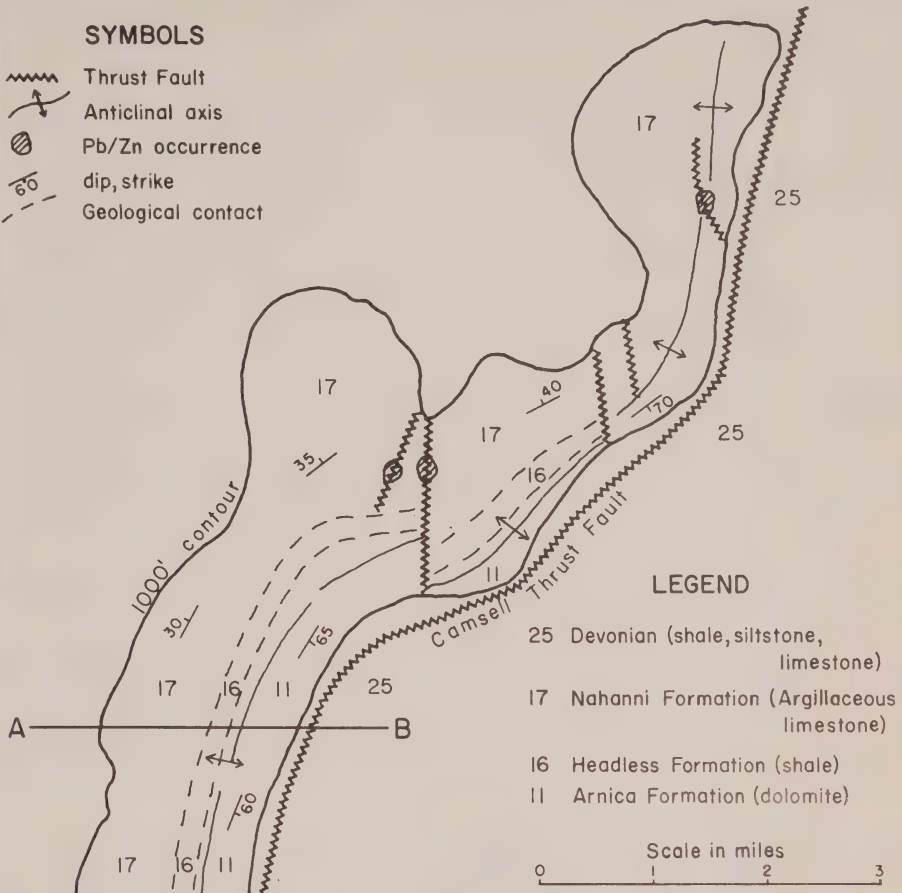
IP and VLF surveys of the ROOT and BOURNE showings gave inconclusive results. A helicopter supported crew of six Cominco geologists and prospectors continued detailed prospecting and mapping and a five-man Inspiration Drilling crew completed over 3,700 feet of drilling in ten holes to test the BOURNE and other showings.

Prospecting during 1973 discovered showings adjacent to mineralized zones found in previous years. The drilling was considered a success as mineralized intersections were obtained, but results were not reported.

Generalised Geology of 95 O/4 Property (Cominco)

SYMBOLS

-  Thrust Fault
-  Anticlinal axis
-  Pb/Zn occurrence
-  dip, strike
-  Geological contact

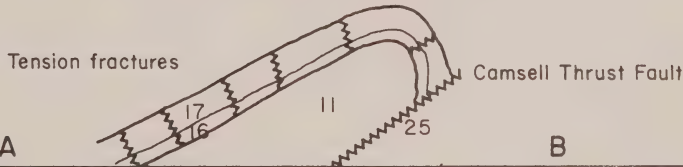


LEGEND

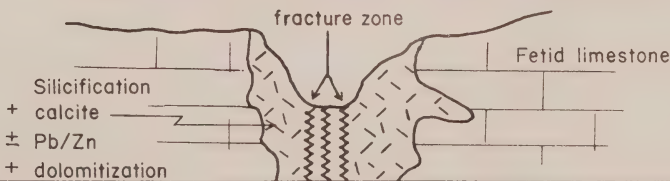
- 25 Devonian (shale, siltstone, limestone)
- 17 Nahanni Formation (Argillaceous limestone)
- 16 Headless Formation (shale)
- 11 Arnica Formation (dolomite)

Scale in miles
0 1 2 3

Diagrammatic cross-section A-B



Diagrammatic cross-section of mineralised zone



Feb. 76

Figure 7. Sketch map and cross-sections showing relationship of mineralization to structure and lithology on the FB and FRY claims.

PROSPECTING PERMITS 294, 295
Giant Yellowknife Mines Limited,
P.O. Box 40,
Commerce Court West,
Toronto, Ontario.

Pb, Zn
950/5, 6
63 20'N, 123° 30'W

REFERENCE

Douglas and Norris (1961).

PROPERTY

Prospecting Permit 294	95 0/5
Prospecting Permit 295	95 0/6

LOCATION

The permit areas straddle the Mackenzie River just north of the village of Fort Wrigley which has a gravel airstrip adequate for aircraft up to DC-3 size.

HISTORY

Permits 294 and 295 were issued in 1973 after exploration had discovered lead-zinc showings just south of the area. Copper showings had been reported in the Mount Cap area in NTS 95 0/6, (Douglas and Norris 1961).

DESCRIPTION

The permits cover areas along the eastern edge of the Mackenzie Mountains and parts of the Franklin Mountains. Upper Devonian shale, sandstone and minor limestone (units 23, 24 and 25 respectively, Douglas and Norris, 1963) underlie most of the west half of the permit areas. A northerly striking thrust fault crossing the centre of the area has upfaulted and exposed a band of Middle Devonian Nahanni Formation limestone and Bear Rock Formation brecciated dolostone (units 21 and 26, *ibid*). The eastern part of the area is underlain by northwesterly striking Middle Devonian to Proterozoic shale, limestone, dolostone, and sandstone which becomes progressively older toward the east where their outcrop is cut off by a north striking thrust fault. Upper Devonian and Cretaceous shale (units 23 and 27, *ibid*) are exposed east of the thrust fault near the border of the permit areas.

CURRENT WORK AND RESULTS

A detailed stream silt survey by Geophoto Services Ltd. of the permits outlined Pb-Zn anomalies almost two miles long. In addition, numerous spot highs of Pb, Zn and/or Cu were found. One of the major geochemical anomalies was briefly prospected and although no mineralization was recognized in the field, a few grab samples assayed more than 1% Zn.

Manalta Coal Ltd.
P.O. Box 2880,
Calgary, Alberta.

COAL
96 C/11, 14
64°50'N 125°20'W

REFERENCE

Hume, (1954).

PROPERTY

Coal Licences 21-24.

LOCATION

The coal licences are located at and southeast of Fort Norman which may be reached by aircraft from Norman Wells or by barge along the Mackenzie River System.

HISTORY

Oil companies have conducted seismic and drill tests in the area in the search for oil and gas but no previous work has been reported on coal.

DESCRIPTION

The coal licences cover over 150,000 acres, most of which is covered by swampy overburden and underlain by Tertiary rocks which have been folded into a northwest striking syncline. The limbs of the syncline dip approximately 1° toward the fold axis.

The coal is in seams as much as 15 feet thick and may contain thin layers of clay or bentonite.

CURRENT WORK AND RESULTS

Two coal showings were examined and sampled. The Seagull Island showing is located on the west bank of the Mackenzie River opposite Seagull Island where two coal seams are seen in a large slump block along the Mackenzie River bank. The lower 4 feet thick seam is separated from the 10 foot thick upper seam by 15 feet of light coloured siltstone. Vugs in the upper seam are filled with a yellow translucent resinous substance identified as amber. A channel sample across the lower seam analyzed 7588 BTU/lb (dry) and a grab sample of the upper seam analyzed 10,610 BTU/lb (dry).

Another coal occurrence on the north bank of the Mackenzie River, 2 miles east of Fort Norman also has two main coal seams. The upper seam consists of a 6 foot coal bed underlain by a one foot bentonite bed and then another 9 foot coal bed. A lower 4½ foot thick seam is located 30 feet below the upper seam. A grab sample from this seam analyzed 9930 BTU/lb (dry) and one from the upper seam analyzed 10,416 BTU/lb (dry).

A third coal occurrence noted on the south bank of Great Bear River opposite the mouth of the Brackett River was observed from the air but not examined.

CANTUNG PROPERTY
Canada Tungsten Mining Corp. Ltd.,
80 Niobe Street,
North Vancouver, B.C.

WO₃ 105 H/16
61°57'N, 128°15'W

REFERENCES

Blusson (1971); Padgham *et al.* (1975).

PROPERTY

CED 1-73; EF 2-8; RL 1-5, 8-10, 19-20; WO 1-11; BC 1-8, 10-11;
AC 1-7; G 1-36; R 1-36; P 1-36; L 1-36; V 1-36; B 1-36; PK 1-30;
O 1-36; Y 1-36.

LOCATION

The Cantung Mine is located near the head waters of the Flat River, 220 miles west of Fort Simpson. Figure 8, No. 5 shows the location of the 430 claims making up the property. The mine area may be reached by 130 miles of all-weather highway from Watson Lake on the Alaska Highway. A gravel airstrip allows access to fixed-wing aircraft.

HISTORY

The history is outlined in the 1971-72 Mineral Activity Report (Padgham *et al.* 1975).

DESCRIPTION

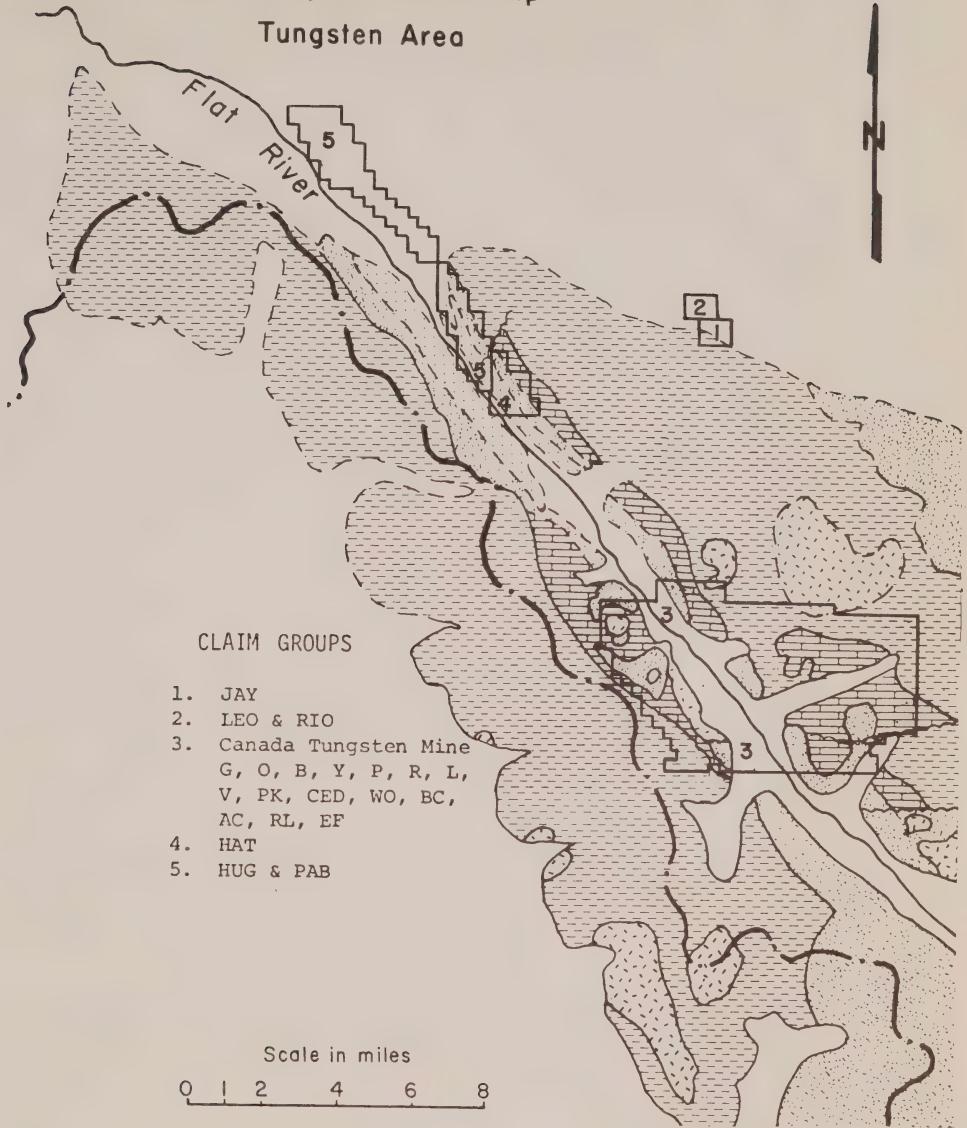
Locally, Cambrian dolostone, limestone and shale predominate. These have been altered to their metamorphic equivalents in aureoles produced by quartz-monzonite intrusions. Scheelite, pyrrhotite and minor chalcopyrite are found in a diopside-garnet-epidote skarn within the Lower Cambrian Sekwi Formation (Blusson, 1971). High grade ore is found in altered dolostone, lower grade material in a banded skarn-chert unit.

The main ore body, the new E-zone is located 1,800 feet northeast and 2,100 feet below the open pit ore body. It strikes easterly and plunges gently eastward.

CURRENT WORK AND RESULTS

A 13 by 16 foot adit collared in October 1972 was driven westerly for 3,800 feet and access ramps, raises, a ventilation decline and conveyor tunnel were developed. Over 32,000 feet of underground diamond drilling

Property Location Map Tungsten Area



LEGEND






 Lower Cambrian (limestone)	 Ordo-Silurian (shale/sandstone)
 Upper Cambrian-Ord. (limestone - sandstone)	 Cretaceous (quartz-monzonite)
 Cambrian & Earlier (slates & phyllites)	

Figure 8. Geological sketch map showing property locations in the Tungsten area. Geology after Gabrielse *et al.* (1973).

outlined 4.2 million tons grading 1.68% W_3 and 0.22% Cu. The western extension of this has not been sufficiently explored to outline ore reserves. An additional 3 million tons grading 0.61% W_3 outlined within the banded chert section are not considered ore under present market conditions.

HAT CLAIMS

Acheron Mines Ltd.
107, 325 Howe St.,
Vancouver, B.C.

Cream Silver Mines Ltd.
9th Floor,
850 West Hastings St.,
Vancouver, B.C.

Cu, Pb, Zn

105 I/I

62°04'N, 128°28'W

REFERENCE

Green *et al.* (1968).

PROPERTY

HAT 18-40, A66728-50.

LOCATION

The HAT claims (Figure 8, No. 14) are 10 miles north of Tungsten and two miles southeast of Flat Lake which is accessible to fixed-wing float-equipped aircraft. A road from Flat Lake through the southern part of the HAT claims joins the Tungsten-Watson Lake Highway, 3 miles to the south.

HISTORY

The claims were staked in February 1973 adjacent to Canex Placer's PAB claims.

DESCRIPTION

The claims are underlain by Ordovician and Silurian black shale, Upper Cambrian limestone, siltstone and dolostone, and Lower Cambrian dolomite, siltstone and limestone (units 10, 7b and 4b respectively, Green, *et al.* 1968). The Ordovician-Silurian shale forms the core, and the Cambrian units the limbs, of a northwest striking, shallowly plunging syncline.

CURRENT WORK AND RESULTS

Prospecting, geological mapping and geochemical sampling on the HAT group located a few scattered occurrences of malachite, azurite and minor tetrahedrite in narrow discontinuous quartz veins within the Cambrian limestone (unit 7b, *ibid*).

Soil or rock samples were taken at 200 foot intervals along the east trending claim lines which are 1500 feet apart. The soil samples contained from 5 to 187 ppm Pb, 5 to 2500 ppm Zn and 3 to 170 ppm Cu. The sample

interval was so wide that anomalies could not be discerned from the few anomalous values obtained. Rock samples assayed as much as 0.46% Zn and 0.97% Pb.

JAY, RIO, LEO GROUPS
TCL Exploration Group
248 Second Avenue,
Kamloops, B.C.

Pb, Zn, Ag, Cu, Ag, WO_3
105 I/1
62°06'N, 128°13'W

REFERENCE

Green *et al.* (1968).

PROPERTY

JAY 1-12, A8641-52; RIO 13-24, A8653-64; LEO 1-12, A67181-92.

LOCATION

The property is located on a tributary of the Flat River, (Figure 8, Nos. 1, 2) 9 miles north of Tungsten which is accessible by road and fixed-wing aircraft.

HISTORY

This area was first staked as the D claims in 1953 by G. Dalziel and was examined under option by Yukon Ranges Exploration Ltd., a consortium of Conwest, Frobisher and Nova-Co. Exploration Limited later that year. It was restaked by Dalziel as the DAL claims (112734) in 1959; again as the ZIN claims (117133) in 1960 by Cassiar; by Dalziel in 1966 as the DAL claims (N84260); and by Amax in 1969 as the MOON claims (T36703); and finally as the JAY and RIO claims in March, 1973 by Alex Black who also staked the contiguous LEO claims in July 1973.

Chip samples from mineralized quartz veins found by Dalziel in 1953 returned an average of 0.05 oz/ton Au, 0.1 oz/ton Ag, 0.45% Pb and 0.15% Zn over two feet. In 1961, Canada Tungsten found a nearby skarn zone which averaged 0.1% WO_3 .

DESCRIPTION

The claims are underlain by widespread Cambrian or earlier slate and phyllite, narrow, northwest striking Lower Cambrian quartzite, shale and dolostone and Upper Cambrian dolostone and siltstone which are intruded by a quartz monzonite stock (units 2, 5a, 7b and 19, respectively Green *et al.* 1968).

Northwest trending quartz veins up to 5 feet wide, 400 feet long, dip 65° east and crosscut Cambrian or earlier slate. They contain irregular bands of pyrite, galena, sphalerite, arsenopyrite and tetrahedrite of variable width, the thickest reaching one foot.

Pyrrhotite-bearing diopside skarn has developed in Upper Cambrian dolostone (unit 7b, *ibid*) adjacent to a Cretaceous quartz monzonite stock and occurs one mile east of the mineralized quartz veins. A zone as much as 10 feet wide and 200 feet long within the skarn contains scheelite pyrrhotite mineralization grading 0.1% WO_3 .

CURRENT WORK AND RESULTS

Only two days were spent on exploration of claims in 1973. Rock and soil samples collected near the known mineralized zones were analyzed for copper, lead, zinc, molybdenum, gold, silver and arsenic. The highest values obtained from a grab sample of the quartz-vein type mineralization assayed 2.03% Pb, 2.20% Zn, 18.8% As, 1.66 oz/ton Ag and 0.05 oz/ton Au. Too few soil samples were gathered to make the results meaningful.

HUG CLAIMS

Canex Placer Ltd.,
700 Burrard Street,
Vancouver 5, B.C.

Pb, Zn
105 I/1, 2
62°07'N, 128°30'W

REFERENCE

Green *et al.* (1968).

PROPERTY

HUG 1-71, 106029-82; A66851-62;

PAB 1-27, 84708-34.

LOCATION

The HUG and PAB claims (Figure 8, No. 15) extend northwest from the north shore of Flat Lake which is located 8 miles north of Cantung, 130 miles north of Watson Lake and 220 miles west of Fort Simpson. Flat Lake may be reached by fixed-wing aircraft or by a secondary road from the highway connecting Watson Lake and Tungsten.

HISTORY

The 66 HUG claims were staked for Canex Placer in April 1973 on Pb-Zn anomalies discovered during a regional stream sediment geochemical survey in 1972.

The FERN 1.24 (A67665) lie immediately north and the DEL 1-62, A67689-740 south of the HUG-PAB group. Both groups were staked for North Valley Resources Ltd. in 1973 but no work was recorded and the claims have lapsed.

DESCRIPTION

Geological mapping (Green *et al.* 1968) shows the claims to be underlain by a northwest striking syncline, with a core of Upper Ordovician and Silurian black graptolitic shale which is flanked to the southwest and northeast by Upper Cambrian limestone and siltstone and by Lower Cambrian silty dolostone (units 10, 7b and 4b respectively, *ibid*).

CURRENT WORK AND RESULTS

Soil surveys covered the northwest and southeast end of the claim block along east-west grid lines 500 feet apart. Samples were collected at 50 foot spacings and after drying, the minus 80 mesh fractions were digested in hydrochloric and perchloric acid and analyzed by atomic absorption. Values ranged as high as 162 ppm Pb, 5,600 ppm Zn and 197 ppm Cd.

The survey of the southeast section of the HUG group did not outline anomalies but two were found in the northwest sector. One anomaly is over 4,000 feet long and up to 2,000 feet wide. These anomalies are considered to be directly related to buried mineralization.

HOWARDS PASS DISTRICT

In 1972, after a number of years of geological exploration in the Cordillera Canex-Placer Ltd. made a major lead-zinc discovery in the Howards Pass area on the Yukon-Northwest Territories border. Numerous claim blocks were tied onto the Canex-Placer property or staked farther afield along the strike of the favourable shale units and a general resurgence of interest and a great increase in the level of prospecting and exploration took place in the Cordilleran Province during the following years.

At least 25 properties (shown on Figure 9, p. 129) are described for this general area, only one of which the NIP-TOY-LOU group of claims, existed prior to the Canex-Placer staking. Descriptive material applicable to all these properties, has been assembled in one section in order to avoid monotonous repetition.

Most of the claim groups are easily reached by rotary wing aircraft from the STOL-port recently constructed in Howards Pass on the Yukon portion of the Canex-Placer holdings, or from Summit Lake in the Yukon which is adequate for float equipped aircraft. Two somewhat smaller Lakes also suitable for bush aircraft are "Gordon Lake", 19 miles southeast and "Cominco" Lake, 8 miles northerly from Howards Pass afford local access. Forty miles of winter road now connects the Howards Pass area with Tungsten and the Tungsten-Watson Lake highway. At present, this road is only suitable for tracked or all-terrain vehicles but in the near future the winter road will be replaced by a highway presently in the planning stage. Howards Pass is 475 miles due west of Yellowknife, and 310 miles westerly of Fort Simpson, the nearest major centre in the Northwest Territories. Watson Lake, 160 miles to the south and Ross River, 110 miles to the west are in the Yukon Territory.

The Howards Pass district lies near the eastern border of the Selwyn Mountains, a northwest trending arcuate belt of Helikian to Mississippian clastic and carbonate beds which have been intruded by Cretaceous quartz-

monzonite stocks. The sedimentary rocks strike generally northwesterly and have been folded into a series of anticlines and synclines whose axes strike northwesterly. These folds have been cut by northwesterly and northeasterly striking faults.

The host rock to the extensive lead-zinc bodies on the Canex-Placer property is a black, graptolitic and locally pyritic mudstone, a phase of the Upper Devonian to Mississippian Road River shale. A wavy-banded limestone lying beneath the host rock contains sub-two inch thick locally boudinaged layers of mudstone within a grey fine grained limestone.

The Archives of the Resident Geologist's Office in Yellowknife record very little previous exploration in the Howards Pass district. The fine grained state of the ore minerals and the recessive nature of the host black shales make traditional prospecting difficult, furthermore the area, at the height of land between the Yukon and the Mackenzie District until recently was considered too remote and difficult of access to attract many exploration efforts.

In 1973, there was only one major published source of geological data on the Howards Pass Area, the 1:250,000 map of the Nahanni Area by Green, Roddick and Blusson (Green *et al.* 1968).

NIP, TOY, LOU
Canex Placer Ltd.
700 Burrard Street,
Vancouver 5, B.C.

WO₃, Cu
3 105 I/7
62°22'N, 128°37'W

REFERENCE

Green *et al.* (1968).

PROPERTY

NIP 2, 4, 9, N84659, 61, 66;
TOY 1-10, 12-23, A67480-96, 500, A66864-68;
LOU 1-14, A56188-A56201.

LOCATION

The NIP, TOY and LOU groups (Figure 9, Nos. 1 and 2) lie four miles east of "Gordon" Lake which can be used by fixed-wing aircraft.

HISTORY

The original "Lened" showings were discovered by Canex Aerial Exploration Limited in 1960. Geological mapping and two diamond drill holes were completed in 1961. Atlas Explorations Ltd. optioned the NIP claims from

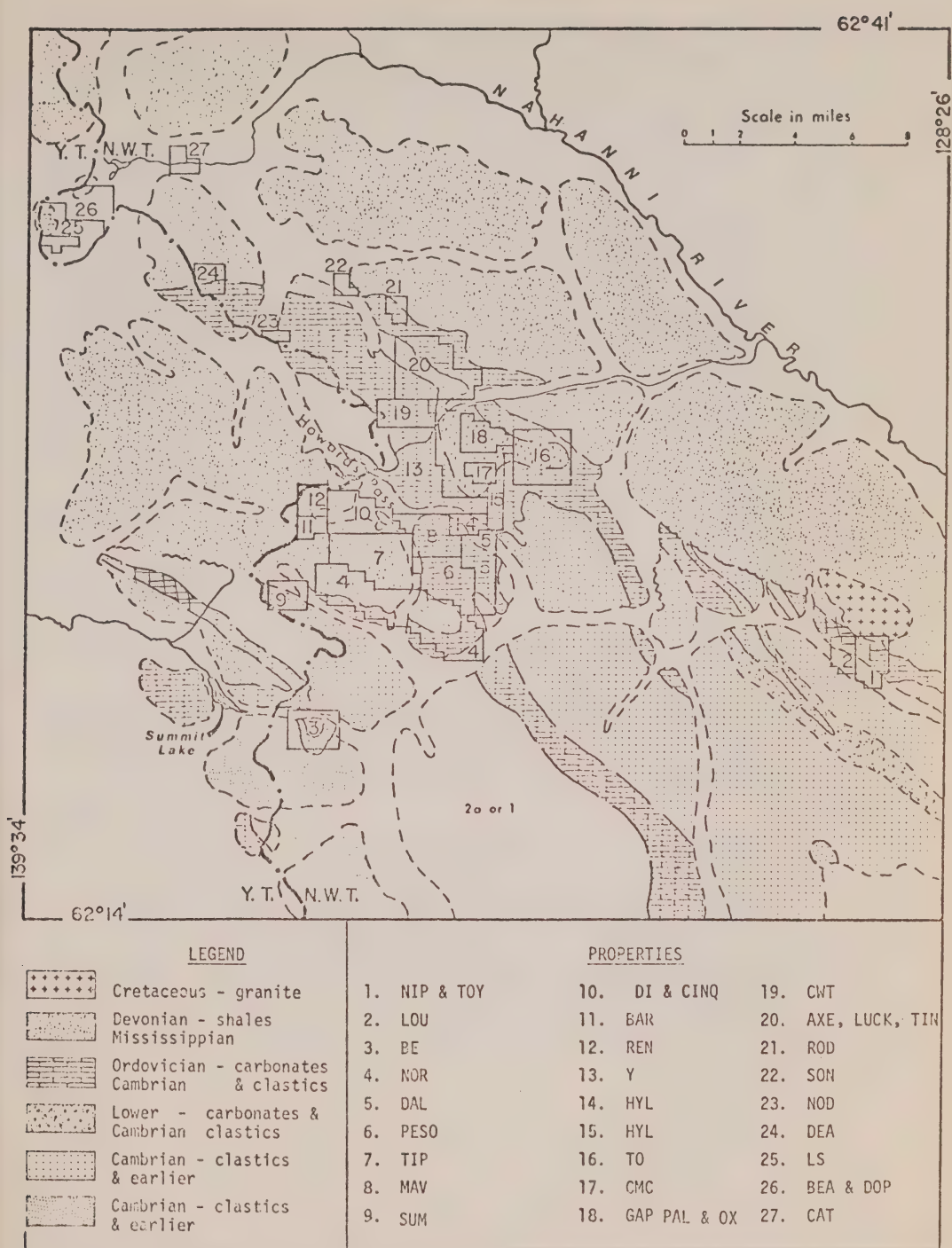


Figure 9: Property location map and geological sketch map of the Howards Pass Area (1973). Geology after Green et al. (1968).

Hugo Brodell in 1968 and conducted a soil sampling and magnetometer survey. Further prospecting by Hugo Brodell uncovered scheelite-bearing skarn south of the "Lened" showings and the TOY and LOU claims were staked to cover the showings. These claims as well as the three of the original NIP claims were optioned by Canex Placer in 1973.

DESCRIPTION

Published geological maps show the NIP-TOY-LOU group to be underlain by steeply southwest dipping, northwest striking Lower Cambrian vari-coloured slates, Upper Cambrian limestone and siltstone and Devonian black shale, siltstone and banded chert (Units 2, 7b and 18b, respectively, Green *et al.* 1968). A Cretaceous quartz monzonite stock has intruded the sedimentary sequences on the claims and has produced a metamorphic aureole. Detailed mapping on the property has outlined metamorphic zones containing black biotite hornfels, "cooked" limestone, marble, transition-zone skarn, diopside-garnet skarn and quartz-muscovite gneiss. All the tungsten showings are within the diopside-garnet skarn.

Scheelite in the original "Lened" showings occurs in a pyrrhotite-chalcopyrite skarn but the scheelite recently found in the diopside-garnet skarn has little associated sulphides. Only one trench contains disseminated pyrrhotite and chalcopyrite.

CURRENT WORK AND RESULTS

Geological mapping covered the NIP, TOY and LOU claims and the main showings were trenched, mapped and sampled.

The main scheelite bearing diopside-garnet skarn is exposed for 2,500 feet along a south facing slope of Lened Ridge. Four trenches were excavated across this zone. One trench gave assays of 0.69% WO_3 over 22 feet while the others gave 0.17% WO_3 over 22 feet, 0.28% WO_3 over 15 feet and 0.16% WO_3 over 30 feet.

A 6 foot chip sample across the diopside skarn zone, outcropping along the crest and north facing slopes of Lened Ridge, assayed 1.51% WO_3 .

Additional scheelite occurrences found on the property include a three foot wide pyrrhotite-chalcopyrite-scheelite skarn in a fault zone within black limestones near Lizzie Creek, 1500 feet east of the main zone trenches. A chip sample across this zone assayed 0.49% WO_3 . Samples from a small skarn zone located 1000 feet north of Lened Ridge assayed 0.32% WO_3 over 15 feet. Scheelite bearing skarn and float were found on a ridge 5,000 feet west of Lened Ridge. A 6 foot sample across the diopside-garnet skarn in this area assayed 0.31% WO_3 .

BE
Agilis Engineering Ltd.
107 - 325 Howe St.,
Vancouver, B.C.

Pb, Zn
105 I/6
62°20'N, 129°15'W

REFERENCE

Green *et al.* (1968).

PROPERTY

BE 1-35, A66651-85.

LOCATION

The BE group is located 9.5 miles south of Howards Pass (Figure 9, No. 3).

HISTORY

The claims were staked in February 1973 by P. Frank and obtained by Agilis Engineering.

DESCRIPTION

The regional geological map indicates the claims to be underlain by the nose of a north plunging syncline with Devonian black shale underlain by Upper Cambrian limestone and siltstone.

CURRENT WORK AND RESULTS

Prospecting, geological mapping and geochemical exploration on the property found abundant pyrite in fractures or disseminated throughout the Devonian black shale unit but no lead-zinc mineralization.

East-west grid lines were established 400 feet apart and soil and rock samples were taken at 200 foot spacings. Atomic absorption analysis showed the metal content of the soil samples ranged as high as 2800 ppm Zn and 480 ppm Pb. XRF analysis of the rock samples showed the most mineralized sample contained 1.10% Pb. An area of anomalous values was outlined on the northeast portion of the claim group.

NOR		Pb, Zn
Archeron Mines Ltd.	Grandora Explorations Ltd.	105 I/6
107 325 Howe St.,	107, 325 Howe St.,	62°23'N, 129°06'W
Vancouver, B.C.	Vancouver, B.C.	

REFERENCE

Green *et al.* (1968).

PROPERTY

NOR 76-87, 88-113, A52789-800; A66751-76.

LOCATION

The NOR claims lie 6 miles southeast of Howards Pass (Figure 9, No. 4).

HISTORY

The NOR claims, initially staked in February 1973, were restaked in July 1973 to correct staking irregularities. The large NOR group, 113 claims, were divided into 3 blocks which were optioned to three separate exploration companies.

DESCRIPTION

The NOR group covers the nose of a large syncline whose axis plunges moderately to the northwest. The core of the syncline contains black shale, sandstone and conglomerate (unit 18b, Green *et al.* 1968) underlain by an older grey chert unit. Cambrian or younger calcareous shale and limestone lie stratigraphically below the grey chert unit. The calcareous shale, the limestone and the grey chert outcrop on the north and south limbs of the syncline while the black shale, sandstone and conglomerate lie at the hinge.

CURRENT WORK AND RESULTS

Prospecting, geological mapping, and soil and rock sampling on the property located galena and sphalerite mineralization in the grey chert unit on the north limb of the syncline and a few isolated patches of mineralization in a 5000 foot long quartz vein in the grey chert unit. Most of the galena and sphalerite is disseminated throughout the chert unit with a minor amount in the black shale.

Soil or rock samples were taken at 200 foot intervals along grid lines 400 feet apart, where the topography permitted. Analysis of the soils by atomic absorption methods showed from 3 to 2700 ppm Zn, 6 to 780 ppm Pb and 2 to 230 ppm Cu. The rock samples assayed up to 2.63% Pb and 2.92% Zn. Two anomalies were found, one outlining the mineralization in the grey chert unit initially discovered by prospecting, and the other located on the overburden covered southeastern portion of the property which is thought to be underlain by black calcareous shales. More work is required to further evaluate the anomalies.

NOR		Pb, Zn
Archeron Mines Ltd.	Ramid International Ltd.	105 I/6
107, 325 Howe St.,	1950, 1055 West Hastings St.	62°24'N, 129°09'W
Vancouver, B.C.	Vancouver, B.C.	

Maverick Mountain Resources Ltd.,
534, 789 West Pender St.,
Vancouver, B.C.

REFERENCE

Green *et al.*(1968).

PROPERTY

NOR 4-15, 18-19, 48-75, A52750-88.

LOCATION

The 42 NOR claims listed above are located 55 miles southeast of Howards Pass and form the central portion of a larger southeasterly trending block of some 113 NOR claims (Figure 9, No. 4).

HISTORY

The claims were staked in February 1973 and because of staking irregularities were restaked in July 1973.

DESCRIPTION

The NOR group is located on the southwestern limb of a northwest plunging syncline. The southern half of the claims are underlain by brownish grey calcareous shales and spotted brown sandy shales which trend northwest and dip moderately to steeply to the northeast. Chert pebble conglomerate, grey sandstone and black shale overlie the brown shales. The extreme northeast corner of the claim group is underlain by black calcareous shales thought to represent the same stratigraphic interval present on the Canex-Placer properties.

CURRENT WORK AND RESULTS

Prospecting, geological mapping, soil and rock sampling on the property did not locate visible mineralization. Soil or rock samples were taken at 200 foot intervals along lines 400 feet apart. Minus 80 mesh fractions of the soil samples were digested for 2½ hours in hot nitric acid and analyzed for lead-zinc by atomic absorption. Rock samples were crushed and analyzed by XRF. The metal content of the soils ranged from 1 to 182 ppm Pb and 2 to 4450 ppm Zn. The maximum metal values for the rock samples was 0.25%Pb and 0.44% Zn.

Most of the anomalous values are concentrated in the extreme northeast corner of the NOR group in an 800 by 2000 foot area underlain by calcareous shale which contains mineralization on a nearby property. Isolated anomalous values scattered throughout the property are not considered to be primary targets.

NOR		Zn, Pb
Archeron Mines Ltd.	Tornado Development Corp. Ltd.,	105 I/6
107, 325 Howe St.,	107, 325 Howe St.,	62°15'N, 129°14'W
Vancouver, B.C.	Vancouver, B.C.	

Juniper Mines Ltd.,
107, 325 Howe St.,
Vancouver, B.C.

REFERENCE

Green *et al.* (1968).

PROPERTY

NOR 1-3, 5-7, 16-17, 20-47, 57, A52737-49, A66686-739.

LOCATION

The 27 NOR claims listed above are part of a larger block of NOR claims located 5 miles south of Howards Pass (Figure 9, No. 4). Three separate companies explored parts of the NOR block hence three write ups are presented.

HISTORY

The NOR claims were staked in February 1973 and because of staking irregularities, were restaked in July 1973.

DESCRIPTION

The NOR group is located on the southwestern limb of a northwest plunging syncline. The southern portion of the claim group is underlain by Cambrian slate and phyllite which is overlain by Cambrian limestone, siltstone and dolomite (units 2 and 7b, Green *et al.* 1968). The northern portion of the claim group is underlain by Devonian black shales and grey sandstone (unit 18b, *ibid*).

CURRENT WORK AND RESULTS

Prospecting, geological mapping, soil and rock sampling on the NOR claims did not outline mineralization other than a few outcrops of rusty shale.

Rock and soil geochemical samples were taken every 200 feet along lines 400 feet apart. Soil samples were analyzed by atomic absorption and rock samples by XRF. Values ranged from 5 to 59 ppm Pb and 12 to 1800 ppm Zn in the soil samples, which outlined a north trending soil geochemical anomaly, 800 feet by 400 feet, overlying the shale unit. Metal values in the rock samples were consistently low, the highest assay was 0.24% Pb and 0.32% Zn.

DAL
D.J. Kennedy,
380 Vinet Drive,
Dorval, P. Que.

Pb, Zn
105 I/6
62°23'N, 129°02'W

REFERENCE

Green *et al.* (1968).

PROPERTY

DAL 1-2, 6-7, 11-12, 16-17, 21-23, 31-33, 36, A65981-97 and A66481-96.

LOCATION

The DAL group (Figure 9, No. 5) is located 7 miles southeast of Howards Pass.

HISTORY

The DAL claims were recorded in March 1973.

DESCRIPTION

Extensive overburden covers the DAL claims which apparently are underlain by Hadrynian brown slates and phyllites and by Upper Devonian limestone and siltstone (units 2 and 7b, Green *et al.* 1968).

CURRENT WORK AND RESULTS

Prospecting on the DAL claims and a stream sediment survey on and adjacent to, the claims, were conducted in 1973. Sediment samples collected at 300 to 500 feet intervals in the streams, were dried, screened to minus 80 mesh and analyzed for Zn by a dithizone extraction method.

Zinc values ranged from 1 ppm to 560 ppm. High values were considered to reflect high Zn background in the shales.

PESO
Highland Mercury Mines Ltd.,
700, 1177 West Hastings Street,
Vancouver, B.C.

Pb, Zn
105 I/6
62°24'N, 129°09'W

REFERENCES

Green *et al.* (1968).

PROPERTY

PESO 1-40, A66401-31, A66497-500, 572-76.

LOCATION

The PESO group located 4.5 miles southeast of Howards Pass is shown on Figure 9 as property No. 6.

HISTORY

The claims were recorded in February 1973.

DESCRIPTION

The claims are mainly underlain by northwest striking Cambrian limestone, siltstone and dolostone (unit 7b, Green *et al*, 1968). The northeast corner of the property is underlain by Hadrynian slates and the southwest side by Devonian black shale (units 2 and 18b, *ibid*).

CURRENT WORK AND RESULTS

The PESO claims were prospected, geologically mapped, and soil samples were taken at 200 foot intervals along lines 800 feet apart. Atomic absorption, analysis showed the samples contained from 1 to 450 ppm Pb and 5 to 4100 ppm Zn.

Geochemical anomalies were outlined on the southeast and southwest edges of the property but mineralization was not found although it occurs adjacent to the property.

TIP
Acheron Mines Ltd.
and
Agilis Engineering,
107, 325 Howe St.,
Vancouver, B.C.

Pb, Zn
105 I/5, 6, 11, 12
62°30'N, 129°20'W

REFERENCE

Green *et al*. (1968).

PROPERTY

TIP

LOCATION

The claims are in the Howards Pass Area (Figure 9, No. 7).

HISTORY

These claims were staked in February and March, 1973.

DESCRIPTION

This area is within the Selwyn Mountains, a series of northwest striking folded and faulted Paleozoic sediments which have been intruded by Cretaceous granodiorite and quartz monzonite.

CURRENT WORK AND RESULTS

A detailed soil geochemical survey over claim groups listed above was done by Agilis Engineering. Soil samples taken on a 200 by 400 foot grid were analyzed for lead and zinc by XRF and rock specimens taken on geochemical traverses were examined under the binocular microscope and tested for lead-zinc content by XRF.

MAV
Maverick Mountain Resources Ltd.
534, 789 West Pender Street,
Vancouver, B.C.

Pb, Zn
105 I/6
62°25'N, 129°04'W

REFERENCE

Green *et al.* (1968).

PROPERTY

MAV 1-42, A49551-92.

LOCATION

The MAV group is located 4 miles southeast of Howards Pass (Figure 9, No. 8).

HISTORY

MAV 1-36 were recorded in December 1972 in the name of A. Kulan and MAV 37 to 42 were recorded at the same time by T. Dolan.

DESCRIPTION

The MAV claims are predominantly overburden covered, but according to published maps, they are underlain by Cambrian or earlier limestone, siltstone and dolostone (unit 7, Green *et al.* 1968).

CURRENT WORK AND RESULTS

Prospecting and geological mapping were conducted on the property and soil samples were taken at 200 foot intervals along east-west grid lines spaced 1500 feet apart. Atomic absorption analyses of the samples indicated from 5 to 1200 ppm Zn and 1 to 150 ppm Pb. Geochemical anomalies were not outlined and mineralization was not discovered.

SUM CLAIMS

Black Giant Mines Ltd. (N.P.L.)
Suite 2002, 1177 West Hastings St.,
Vancouver, B.C.

Zn, Pb
105 I/6
62°26'N, 129°16'W

REFERENCE

Green *et al.* (1968).

PROPERTY

SUM 1-20, T37901-20 -- N.W.T.

LOCATION

The SUM group straddles the N.W.T.-Y.T. border, 6 miles southwest of Howards Pass (Figure 9, No. 9).

HISTORY

The SUM claims recorded in February 1973, lie 6 miles south of Canex Placer, Howards Pass lead-zinc property.

DESCRIPTION

The southern part of the property is underlain by Proterozoic shale, Cambrian limestone, siltstone and dolostone, and Ordovician to Silurian black shale (units 2, 7b and 10 respectively, Green *et al.* 1968). The north part of the claims is underlain by Devonian shale and argillite (unit 18b, *ibid*).

CURRENT WORK AND RESULTS

B-horizon soil samples were collected every 200 feet on grid lines spaced every 400 feet across the claims. Over 400 samples were screened to -80 mesh, digested in aqua regia and analyzed for Pb and Zn by atomic absorption.

The sample results established background as 14 ppm Pb and 141 ppm Zn. Six zinc anomalies 400 to 800 feet long, up to 200 feet wide and containing values from 400 to 1750 ppm Zn were outlined. The anomalous readings were attributed to a nearby shale unit with a high zinc content.

DI, CINQ
Vestor Explorations Ltd.
1502, 11111 - 87th Ave.,
Edmonton, Alberta.

Zn, Pb, Cu
105 I/6
62°26'N, 129°14'W

REFERENCE

Green et al. (1968).

PROPERTY

DI 1-18 and CINQ 1-27, A11155-97; A65111-22.

LOCATION

The CINQ and DI claims (Figure 9, No. 10) are located one mile south of the Canex-Placer's STOL-airstrip at Howards Pass.

HISTORY

The CINQ and DI claims were staked in December 1972.

DESCRIPTION

Published geological maps show this area to be underlain by Cambrian limestone, siltstone and dolostone, and by Ordovician to Devonian black shale (units 7b and 18b, Green et al. 1968). Detailed mapping by Vestor personnel indicates the area is extensively folded into northwest plunging anticlines and synclines.

CURRENT WORK AND RESULTS

Prospecting, geological mapping, stream sediment and reconnaissance soil geochemical surveys were completed early in 1973.

Extensive overburden cover in the claim area hampered prospecting and geological mapping. Nevertheless, five copper occurrences including malachite-azurite on shale cleavage planes and tetrahedrite in quartz-calcite lenses in shale were discovered. Because sphalerite is very difficult to recognize in shale, the rocks were sampled by chemical analysis. Samples from three localities assayed 7% Zn. Analyses of stream sediment samples, taken at intervals of 300 to 500 feet along the creeks, gave maximum values of 2700 ppm Zn and soil samples gave maximum values of 14,000 ppm Zn.

Later in the summer, gravity and detailed soil geochemical surveys covered that portion of the property underlain by shale similar to that on Canex Placer's holdings. Samples were taken every 100 feet on lines 500 feet apart.

A geochemical anomaly, 1500 by 1000 feet, was found near the centre of the southern boundary of the CINQ and DI property. Anomalous values scattered over the survey area generally outline the projected occurrence of the calcareous black shale.

Gravity readings were taken every 100 feet on lines approximately 500 feet apart. A few anomalous values were obtained over the calcareous black shale. In general, the Bouger values increased from the southwest to the northeast and were thought to reflect a lithologic change rather than mineralization.

BAR
Western Standard Silver Mines Ltd.,
P.O. Box 462,
Kelowna, B.C.

Pb, Zn
105 I/6
62°26'N, 129°15'W

REFERENCE

Green *et al.* (1968).

PROPERTY

BAR 1-20, A67521-40.

LOCATION

The BAR group (Figure 9, No. 11) is located 2.5 to 3 miles southwest of Howards Pass.

HISTORY

The BAR claims were recorded in March 1973.

DESCRIPTION

The BAR group is underlain by Devonian black shale (unit 18b, Green, *et al.* 1968). Mapping on the property sub-divided the shale into rusty, fissile and cherty and calcareous units.

CURRENT WORK AND RESULTS

Prospecting, geological mapping and soil sampling on the claim group failed to discover mineralization. Soil samples taken from grid lines 800 feet apart were analyzed by atomic absorption. Metal content ranged from 4 to 44 ppm Pb and 8 to 2400 ppm Zn but did not outline any anomalous zones. The few selected rock samples assayed returned maximum readings of 0.01% Pb and 0.50% Zn.

REN
Renton Management Ltd.,
609, 850 West Hastings,
Vancouver, B.C.

Pb, Zn
105 I/6
62°26'N, 129°15'W

REFERENCE

Green *et al.* (1963).

PROPERTY

REN 1-16, T37402-417.

LOCATION

The REN group is located 2 miles southwest of Howards Pass (Figure 9, No. 12).

HISTORY

The claims were staked in December 1972.

DESCRIPTION

The REN claims are underlain by black shale and argillite with local occurrences of sandstone, siltstone and chert in unconformable contact with Cambrian limestone, dolostone and siltstone (units 18b and 7b, Green *et al.* 1968) lying to the northeast.

CURRENT WORK AND RESULTS

A 6,000 foot baseline with crosslines every 1,500 feet was used as a grid for a geochemical survey. Soil samples taken at 200 foot intervals on the crosslines were analyzed, but no values were obtained greater than 500 ppm Zn or 60 ppm Pb, all well within the regional background. No anomalous zones were outlined.

CANEX PLACER
Placer Development Limited,
700, 1030 West Georgia Street,
Vancouver, B.C.

Pb, Zn
105 I/6
62°28'N, 129°10'W

REFERENCES

Green *et al.* (1968).

PROPERTY

Y 6-24, 27-30, 35-50, 60, 62-79, 88-113, 122-162.

LOCATION

The 125 Y claims are located 125 miles north of Watson Lake and straddle the N.W.T.-Yukon border (Figure 9, No. 13). An airstrip recently built at Howards Pass may be utilized by large-wheeled STOL aircraft. A 40-mile long winter road built in 1972-73 from near the end of the Tungsten Highway to Canex's property is rough and has only been utilized by tracked vehicles.

HISTORY

The Y claims were staked during the summer of 1972 to cover a large geochemical anomaly found by Canex-Placer Ltd. during a multi-year regional exploration program.

DESCRIPTION

Howards Pass lies within the Selwyn Mountains, a sequence of Proterozoic and Paleozoic sediments intruded by Cretaceous quartz monzonite and granitic stocks. The sediments strike generally northwesterly and have been folded into a series of anticlines and synclines whose axes strike northwesterly. These folds have been cut by northwesterly and northeasterly striking thrust faults.

The main mineralized zone is located on the southwesterly-facing slope of a rounded, northwesterly striking overburden covered ridge. Only rarely is bedrock exposed, although frost heave and skree slopes indicate the general rock type. Trenches bulldozed across the face of the hill have exposed deeply weathered black graptolitic "shale". Such trench exposures are not reliable sources of structured information because of the varying effects of soil creep and solifluction on the hill side. As a result of deep weathering, the mineralized areas are marked only by a faint rusty gossan or locally by small amounts of secondary mineralization such as hydrozincite or smithsonite-cerussite.

Fine-grained galena and very fine-grained sphalerite occur within black, graptolitic and locally pyritic "shale". Galena is disseminated throughout the shale and is readily visible as slightly coarser grains along shear planes. Sphalerite is very fine-grained and is rarely seen in hand specimen. Limited testing suggests that the lead-zinc concentration and ratios vary considerably between showings and the silver content is consistently low. Apparently, mineralization is not limited to one horizon within the host formation.

The host rock, a black graptolitic, pyritic "shale" is now considered to be a mudstone by company geologists and the shaly texture is present only in the weathered zone. Calcareous lenses of black, coarsely recrystallized limestone within the mudstone measure a few feet in thickness and are probably less than 100 feet long. The mudstone also contains calcareous, pyritic nodules up to the size of basketballs. The pyrite in these nodules is well banded and interlayered which may indicate a biogenic origin. Beneath the host rock lies a wavy-banded limestone containing thin whisps (less than 2 inch thick), or boudinage of mudstone.

Mapping by Green *et al.* (1968) suggests the mineralized area lies in Road River shale with underlying banded limestone (unit 18b and 7b *ibid*) on the southwest limb of a syncline. The host rock strikes to the northwest and was thought to dip steeply to the northeast. Geologists working in the area are finding the structure much more complicated than was first anticipated.

CURRENT WORK AND RESULTS

Little of the extensive prospecting, trenching, geological mapping, detailed soil sampling and drilling during 1973 has been filed for assessment credit.

Canex has reported only three of nine or more trenches: trench 4 measures 200 X 14 X 2.43 feet, trench 8, 600 X 19.6 X 5.7 feet and trench 9, 1500 X 16 X 3 feet. Assay values have not been submitted. The five diamond drill holes reported intersected grey-black slightly calcareous shales and mudstones which contained pyrite concretions and carbonate-rich beds with disseminated pyrite. Hole 2, which is 677 feet long, intersected mineralization from 170 to 208 feet which averaged 1.5% Pb and 3.7% Zn. The best 5-foot section assayed 6.68% Pb and 8% Zn. Hole 6, which is 679 feet long, intersected mineralization from 185' to 315' and from 411' to 530'. The best section from the first zone, 225 to 240 assayed 1.6% Pb and 4.3% Zn, the best from the other zone assayed 11.78% Pb and 11.08% Zn between 461 and 470 feet. Hole 8, 490 feet long, intersected low grade mineralization from 175 to 230 feet and from 472 to 490 feet. The best 2-foot section assayed 8.32% Pb and 8.00% Zn. Two more drill holes, 10 and 14, 561 and 603 feet long, were reported but no lead-zinc values were included.

Canex planned their drill program to produce a maximum of structural information rather than outline possible ore reserves.

HYL
D.J. Kennedy
380 Vinet Drive,
Dorval, P.Q.

Zn, Pb
105 I/6
62°24'N, 129°03'W

REFERENCE

Green *et al.* (1968).

PROPERTY

HYL 1-30, 39-41, 51-53, 63-65, A65011-40, 49-51, 61-63, 73-75.

LOCATION

The HYL group (Figure 9, No.14 & 15) is located 5 miles easterly from Howards Pass.

HISTORY

The HYL group was recorded in December 1972. No previous work has been recorded on the area covered by the HYL claims. Two exploration companies explored separate parts of the HYL block.

DESCRIPTION

The HYL claims are underlain by Helikian slates and phyllites, Upper Cambrian limestone and siltstone, and Devonian black shale (units 2, 7b and 18b, respectively, Green *et al.* 1968).

CURRENT WORK AND RESULTS

Prospecting was combined with a stream sediment survey of the claim block during the summer of 1973. Sediment samples taken every 300 to 500 feet along the creeks were dried, screened to minus 80 mesh and analyzed for zinc by a dithizone extraction method. Zinc values ranged from 1 to 1200 ppm. Samples giving high values were concentrated in the northwestern portion of the HYL claims in streams originating on the Canex-Placer property.

Dasson Copper Corporation Ltd.
405, 1015 Beaver Hall Hill,
Montreal, Quebec.

Pb, Zn
105 I/6
62°25'N, 129°00'W

REFERENCE

Green *et al.* (1968).

PROPERTY

HYL 31-38, 42-50, 54-62, 66-71, 72-81, A65041.

LOCATION

The HYL claims (Figure 9, No. 14) are located 5 miles southeast of Howards Pass.

HISTORY

The HYL group was recorded in December 1972 and a portion of the group was optioned to Dasson Copper. No previous work has been filed on the area now covered by the HYL claims.

DESCRIPTION

The HYL claims are underlain by Helikian brown slate and phyllite (unit 2, Green *et al.* 1968), Upper Cambrian limestone and siltstone and Devonian black shale (units 7b and 18b, *ibid*).

CURRENT WORK AND RESULTS

Prospecting and a stream sediment geochemical survey was completed over the property. Dried stream sediment samples were screened to minus 80

mesh and analyzed for zinc by a dithizone extraction method.

Zinc values ranged from 1 ppm to 900 ppm. Over half the samples contained more than 400 ppm Zn which is interpreted as a reflection of the high zinc background of the shales.

TO
Minas de Cerro Dorado Ltd.
107, 325 Howe St.,
Vancouver, B.C.

Pb, Zn
105 I/6, 7
62°28'N, 129°00'W

REFERENCE

Green et al (1968).

PROPERTY

TO 1-49, A66601-50.

LOCATION

The TO group (Figure 9, No. 16) is located 6 miles east of Howards Pass.

HISTORY

The TO group was staked in February 1973 to cover formations similar to those hosting lead-zinc mineralization on the Canex-Placer property.

DESCRIPTION

The TO claims cover a west plunging syncline which has a core of Devonian black shale underlain by Upper Cambrian limestone and siltstone and by Cambrian shale and siltstone (units 18b, 7b and 5, respectively, Green et al. 1968).

CURRENT WORK AND RESULTS

Prospecting, geological mapping and geochemical surveys on east-west grid lines spaced 400 feet apart were conducted over the property. Soil samples, taken at 200 foot spacings and analyzed by atomic absorption contained as much as 250 ppm Pb and 8,000 ppm Zn. The highest values obtained from the few rock samples analyzed were 0.42% and 0.50% Zn. Anomalous values are concentrated in the northwest and southwest portions of the property outlining a northwest trending anomaly 1200 feet by 400 feet underlain by Upper Cambrian limestone, and a southwest trending anomaly 600 feet by 200 feet is underlain by black calcareous shale. Only disseminated pyrite was discovered in the shales.

CMC
Cominco Ltd.,
200 Granville Square,
Vancouver 2, B.C.

Pb, Zn, Ba
105 I/6
62°28'N, 129°05'W

REFERENCE

Green *et al* (1968).

PROPERTY

CMC 1-53, A49751-800, A65198-200.

LOCATION

The CMC claims are located 4 miles east of Howards Pass (Figure 9, No. 17).

HISTORY

The CMC claims were staked in December 1972 adjacent to Canex-Placer's Howards Pass property.

DESCRIPTION

The claims are underlain by a 5000 foot sequence of Cambrian to Mississippian age limestone, shale, dolostone and quartzite striking generally west to northwest. The local geology has been highly complicated by north-west trending folds and thrust faults. A major west trending, north plunging anticline with parallel minor folds and thrust faults transects the middle of the property. Cambrian limestone is exposed along the east side of the hinge of the main anticline and Ordovician and Silurian shale, limestone and chert are exposed along the central and western parts. Mississippian-Devonian units form the northern and southern flanks of the anticline.

CURRENT WORK AND RESULTS

A soil geochemical survey and a geological map on a scale of 1 inch to 1000 feet was made of the property.

The soil geochemistry outlined a number of zinc anomalies, most of which were located within the Ordovician-Silurian shale, limestone chert sequence. Lead anomalies were concentrated within the Ordovician-Silurian sequence close to an unconformity between the Silurian and Devonian sediments. A 5-foot section from a trench dug on one of the zinc anomalies assayed 0.28% Pb and 0.02% Zn. Grab samples 50 feet up-section from the trench assayed 2.95% Pb and 1.5% Zn. Geological mapping delineated a continuous 25-foot thick barite unit within the Devonian-Mississippian sequence.

PAL, GAP OX
Claymore Resources Ltd.,
1830 - 1 Bental Centre,
P.O. Box 49057,
Vancouver, B.C.

Pb, Zn
105 I/6
62°28'N, 129°05'W

REFERENCE

Green *et al.* (1968).

PROPERTY

PAL 1-20, A49962-81;
GAP 1-15, A67201-15;
OX 1-21, A66374-94.

LOCATION

The PAL, GAP and OX claims lie 7 miles north of Howards Pass (Figure 9, No. 18).

HISTORY

These PAL, GAP and OX claims were staked in February 1973 following Canex Placer's announcement of a major lead-zinc discovery in the area.

DESCRIPTION

The southern part of the claim block is underlain by Ordovician and Silurian shale, siltstone and conglomerate (unit 18b, Green, *et al.* 1968) folded into a series of west striking synclines and anticlines. The northern part is underlain by Cambrian and earlier limestone and shale.

CURRENT WORK AND RESULTS

Prospecting, geological mapping and silt, soil and rock sampling were carried out over the property. Silt samples were taken from all streams on the property. Soil samples were taken at 100 foot intervals on lines spaced 500 feet apart across the shale units. Rock samples were taken at 10 foot intervals along a 500 foot section of the Ordovician shale.

The silt and soil samples contained as much as 2,600 ppm Zn and 400 ppm Pb but no lead-zinc mineralization was recognized in the field. The soil and silt survey outlined a large zinc anomaly and corresponding lead anomaly striking northwesterly across the southern portion of the claim group and generally overlying the Ordovician shales. Rock samples from 500 foot shale interval assayed 0.55% combined Pb-Zn.

CWT CLAIMS
Belmoral Mines Ltd.
9th Floor, 850 West Hastings St.,
Vancouver, B.C.

Pb, Zn
105 I/6
62°29'N, 129°08'W

REFERENCE

Green *et al.* (1968).

PROPERTY

CWT 1-7, 12-18, 23-30, 34-41, A49701-07, 12-18, 23-40, 34-41.

LOCATION

The CWT group is located in a block extending from 2.5 miles north-northeast to 4.5 miles northeast of Howards Pass, (Figure 9, No. 19).

HISTORY

The CWT claims were staked in December 1972 by Canex Placer and optioned to Balmoral Mines Ltd.

DESCRIPTION

The property is underlain by Cambrian or earlier limestone, siltstone and dolostone (unit 7b, Green *et al.* 1968) which forms the core of a major northwest striking anticline.

CURRENT WORK AND RESULTS

Prospecting, geological mapping and geochemical sampling were conducted over the property. Soil or rock samples were taken at 200 foot intervals along east-west lines 400 feet apart. Soil samples analyzed by the atomic absorption methods ranged from 1 to 310 ppm Pb and 6 to 760 ppm Zn. The rock samples assayed up to 0.39% Zn and 0.27% Pb. No significant mineralization was detected or geochemical anomalies outlined.

AXE, LUCK, TIN
Vestor Explorations Ltd.,
1902, 11111 - 87 Avenue,
Edmonton, Alberta.

Pb, Zn
105 I/11
62°30'N, 129°05'W

REFERENCES

Green *et al.* (1968).

PROPERTY

AXE 1-40, A49549; A49918; A49940; A66197; A66224; A66074;
LUCK 1-26, A66478; A67281;
TIN 1-20, A66086; A66279; A66398.

LOCATION

The AXE, TIN and LUCK are located 10 miles north of Howards Pass (Figure 9, No. 20). A "STOL" airstrip located on Canex's property, a mile south of the AXE, TIN, and LUCK groups has been used by fixed-wing large-wheel-equipped aircraft.

HISTORY

The AXE, TIN and LUCK claims were staked during 1973.

DESCRIPTION

The AXE, LUCK and TIN groups are underlain by Lower Cambrian and older shales, Cambrian to Lower Ordovician limestone, Lower to Middle Ordovician black graphitic shale and Devonian conglomerate, sandstone and shale. These units strike to the west and have been tightly folded into a series of westerly striking synclines and anticlines. A north-striking dextral fault bisects the property offsetting the units one half-mile.

CURRENT WORK AND RESULTS

Soil, silt and rock samples were collected at 100 foot intervals over those portions of the claim groups underlain by black graphitic shale. The rock samples averaged 0.3% Zn and 0.15% Pb and the silt and soil samples assayed less than 2,000 ppm Zn and 30 ppm Pb. The geochemical survey outlined minor fluctuations in background but did not indicate the presence of economic lead-zinc mineralization.

ROD
Corval Resources Ltd.
Suite 420,
475 Howe St.,
Vancouver, B.C.

Pb, Zn
105 I/11
62°38'N, 129°17'W

REFERENCE

Green et al. (1968).

PROPERTY

ROD 1-20, A67301-20.

LOCATION

The ROD group (Figure 9, No. 21) is located 6 miles north of Howards Pass.

HISTORY

The ROD group was acquired during a staking rush in the winter of 1972-73.

DESCRIPTION

The southwestern portion of the ROD group is underlain by Upper Cambrian and Ordovician limestone, siltstone and dolostone which is overlain on the northeastern portion of the property by Ordovician, Silurian and Devonian black graptolitic shale (units 7b and 18b, respectively, Green *et al*, 1967).

CURRENT WORK AND RESULTS

Prospecting, geological mapping and silt and soil sampling on the ROD claims failed to outline lead-zinc mineralization although 3% pyrite was found in thin layers within a shale unit.

The soil and silt samples contained from 70 to 1600 ppm Zn and 11 to 52 ppm Pb. Variations in lead content represent regional fluctuations in background values. A 3000 by 1000 foot zinc anomaly, located in the northeastern portion of the property, lies at the contact between the Upper Cambrian limestone and the overlying Ordovician to Devonian shale. The anomaly is thought to reflect a regionally high Zn background in the lower portion of the shale.

SON

Leslie M. Hart,
Suite 1005, 1640 Albernie St.,
Vancouver, B.C.

Zn, Pb
105 I/11
62° 33'N, 129° 13'W

REFERENCE

Green *et al*. (1968).

PROPERTY

SON 26-54, A6526-54.

LOCATION

The SON claims are located 7 miles north of Howards Pass, (Figure 9, No. 22).

HISTORY

The SON claims were staked early in 1973.

DESCRIPTION

This claim group is underlain by northwest striking black shales and Cambrian limestone and dolostone (units 7b and 18b, Green *et al.* 1968). The black shale is recessive and is usually overburden covered.

The northeast section of the claim group is overburden covered and is presumably underlain by shale whereas the southwest third is underlain by cliff forming limestones and dolostones.

CURRENT WORK AND RESULTS

Soil samples taken over part of the area on a 400 x 200 foot grid assayed 1 to 3400 ppm Zn. These values outlined a narrow northeast trending anomaly. Low lead values, ranging from 2 to 120 ppm Pb, did not outline any anomalies.

NOD
Renton Management Ltd.
609, 850 West Hastings,
Vancouver, B.C.

Pb, Zn
105 I/11
62°32'N, 129°17'W

REFERENCE

Green *et al.* (1968).

PROPERTY

NOD 1-13, T37800-32.

LOCATION

The NOD group is located 6 miles northwest of Howards Pass on the Yukon-Northwest Territories border, (Figure 9, No. 23).

HISTORY

The NOD group was staked in December 1972.

DESCRIPTION

The NOD group is extensively covered with overburden but regional mapping shows they are underlain by Cambrian limestone, siltstone and dolomite (unit 7b, Green *et al.* 1968).

CURRENT WORK AND RESULTS

A 6,000 foot baseline with a 3,000 foot crossline on each end was used as a grid for a geochemical survey. Soil samples were taken at 200 foot intervals along the crosslines and at 400 foot intervals along the baseline.

Analyses showed all but one sample contained less than 60 ppm Pb and all but four less than 500 ppm Zn. No anomalous trends were outlined by this survey.

DEA
Dynasty Exploration Ltd.
330, 355 Burrard St.,
Vancouver, B.C.

Pb, Zn
105 I/11
62°33'N, 129°23'W

REFERENCE

Green et al. (1968).

PROPERTY

DEA 21-34, A49901-A49914.

LOCATION

The DEA group is located on the N.W.T.-Yukon border, 14 miles northwest of Howards Pass (Figure 9, No. 24). Fixed-wing float-equipped aircraft can land on a few lakes in the area.

HISTORY

The DEA claims were staked by Welcome North Mines during the 1972-73 winter.

DESCRIPTION

The DEA claims are underlain by a vertically gradational sequence of "wavey bedded" limestone, dark shaly limestone and black, locally calcareous shale. West striking layers of "wavey bedded" limestone form anticlines separated by a band of black shaly limestone in a syncline.

The youngest unit, a black, locally calcareous shale which contains cherty shale and pyrite is located on the north side of the claims. A north trending fault cuts across the northwest corner of the claim group and displaces the sequence, bringing "wavey bedded" limestone into contact with black shale and black shale into contact with black shaly limestone and "wavey bedded" limestone.

CURRENT WORK AND RESULTS

Cursory geological mapping failed to discover mineralization and a detailed soil geochemical survey outlined only a few lead, zinc and copper spot highs within the black shaly limestone.

LS
Canex-Placer,
Placer Development Ltd.,
700, 1030 West Georgia St.,
Vancouver, B.C.

Pb, Zn
105 I/12
62°34'N, 129°32'W

REFERENCE

Green *et al.* (1968).

PROPERTY

LS 1, 8-10, 15, 23.

LOCATION

The LS claims are on the Yukon-N.W.T. border, 14 miles northwest of Howards Pass, (Figure 9, No. 25).

HISTORY

The LS claims were staked by Canex-Placer in 1972 over shale formations as a result of extensive regional geochemical exploration.

DESCRIPTION

The LS claims are underlain by Lower Cambrian to Ordovician carbonates and clastics.

CURRENT WORK AND RESULTS

Work done on the LS claims has not been recorded.

BEA, DOP
Makao Development Co. Ltd. (N.P.L.)
Suite 600, 789 West Pender St.,
Vancouver, B.C.

Pb, Zn
105 I/11, 12
62°35'N, 129°35'W

REFERENCES

Green *et al.* (1968).

PROPERTY

BEA 1-7, 10-15, 18-23, 26, A49801-29
DOP 8-9, 16-17, 24-25, 28-29

LOCATION

The BEA and DOP claims are located 14 miles northwest of Howards Pass in 105 I/12 except for BEA 10, 12, 14 and DOP 16 which are in 105 I/11. Figure 9 shows the location of the group (No. 26).

HISTORY

The BEA and DOP claims were recorded in February 1973.

DESCRIPTION

The southern portion of the claims is underlain by Cambrian limestone, siltstone and dolostones, the northern part by Devonian black calcareous shale (units 7b and 18b, Green, *et al* 1968).

CURRENT WORK AND RESULTS

Prospecting and a geochemical survey conducted over the property by Torwest Resources Ltd. (N.P.L.) and geological mapping by Agilis Engineering failed to discover mineralization. Soil samples collected every 200 feet, along north south grid lines 800 feet apart, were analyzed by atomic absorption. Metal contents ranged as high as 2850 ppm Zn and 112 ppm Pb. Anomalous values had an erratic distribution over the claims except for one anomalous trend outlined on the southeast edge of the property.

CAT
Morris Black

Zn, Pb
105 I/11
62°35'N, 129°30'W

REFERENCE

Green *et al.*, (1968).

PROPERTY

CAT 1-18, 23-25, A65777-84, 86-94, 99-801.

LOCATION

The CAT claims are located 7 miles north of Howards Pass (Figure 9, No. 27) and 2 miles east of a small lake named "Cominco" Lake which is suitable for fixed-wing float-equipped aircraft.

HISTORY

The CAT group was recorded in December 1972.

DESCRIPTION

The CAT claims are mostly overburden covered and where bedrock is exposed, consists of Devonian black shale and argillite (unit 18b, Green *et al.* 1968)

CURRENT WORK AND RESULTS

Soil samples collected from the B horizon on a 400 foot by 200 foot grid were screened to minus 80 mesh, digested in aqua regia and analyzed for lead and zinc by atomic absorption.

Metal values ranged from 4 to 50 ppm Pb and 4 ppm to 825 ppm Zn. Background values for lead and zinc were interpreted as 11 ppm Pb and 112 ppm Zn and anomalous values as those greater than 30 ppm Pb and 300 ppm Zn. Four anomalous zinc trends covering areas 800 feet long and 400 feet wide were outlined but are situated in swampy areas and are thought to be produced by zinc accumulating in reducing swamp conditions rather than by zinc concentration in the bedrock. Six anomalous lead values were obtained. These are scattered throughout the southeastern quarter of the claim group and are not coincident with any of the zinc anomalies.

SAND, GUN
Dynasty Explorations Ltd.
330 - 355 Burrard St.,
Vancouver, B.C.

Pb, Zn
105° 1' 15", 16°
62° 53' N, 128° 31' W

REFERENCE

Green *et al.* (1968)

PROPERTY

GUN 17-23, 33-105, 106-110, SAND 1-16, 21-68, A72933-3005, A73021-68, 74-78, A75001-23.

LOCATION

The SAND and GUN claims are located 15 miles southeast of O'Grady Lake, 13 miles south-southwest of Natla Lake and 140 miles northeast of Ross River. Fixed-wing aircraft can land on O'Grady and Natla Lakes.

HISTORY

The GUN and SAND group were staked in 1973, to cover anomalous lead values found in soils and gossan during a regional geochemical survey. The GUN group, contiguous to the west with the SAND group, covers sphalerite mineralization.

DESCRIPTION

The claims are located in the boundary area between the northwesterly striking Selwyn and Mackenzie Mountains which is composed mainly of Hadrynian to Devonian and younger clastic and carbonate rocks. The Selwyn Mountains contain deep water clastics and carbonates intruded by Cretaceous quartz monzonite whereas the Mackenzie Mountains contain shelf carbonates and no apparent igneous intrusions.

The west portion of the claim groups is underlain by Middle Ordovician to Silurian limestone (unit 9a, Green *et al.*, 1968) intruded to the west by Cretaceous quartz monzonite and underlain by north striking Cambrian to Ordovician limestone, siltstone and sandstone (unit 7b, *ibid*). A northeast striking thrust fault has faulted a wedge of east striking Middle Cambrian siltstone, limestone and dolomite and Upper Cambrian and Ordovician limestone, siltstone and sandstone against the north striking limestone, siltstone and sandstone (units 6, 7 and 7b, respectively, *ibid*). A major north striking thrust fault cuts all these units and has brought them into contact with Lower to Middle Cambrian dolomite (unit 6, *ibid*).

Sphalerite occurs within reefoid limestone, "wavy-banded" limestone and shale.

CURRENT WORK AND RESULTS

Follow-up prospecting of anomalous areas obtained by a regional geochemical reconnaissance programme led to the discovery of mineral occurrences. Over 600 soil, silt and rock samples were taken from the property but a detailed soil sampling survey was not completed because of early snow.

Showings containing sphalerite mineralization were found during the initial exploration and further work was planned.

CAN
SEREM Ltd.,
2100 Drummond Suite 770,
Montreal 107, P.Q.

Cu, Pb, Zn
105 I/15
62°52'N, 128°44'W

REFERENCE

Green *et al.* (1968); Padgham *et al.* (1975).

PROPERTY

CAN 1-42, A49883-88, 593-98, A65085-196, A65985-90.

LOCATION

The CAN claims were located 12 miles southeast of O'Grady Lake which is suitable for fixed-wing float-equipped aircraft. Ross River is 130 miles to the southwest.

HISTORY

Mineral showings in the area were staked (RA claim A16180) by P. Risby in July 1970 and optioned in the fall of 1971 to Arrow Inter-America Corp. who obtained Prospecting Permit 288 covering 105 I/15 in 1972 and prospected the area later that year (Padgham *et al.* 1975). Arrow Inter-America restaked the RA claim as the STIB claim (A49254) in October 1972 and in March 1973 returned the property to Risby. The CAN claims were staked immediately west of the STIB claim in February 1973.

DESCRIPTION

The claims are underlain by Middle Ordovician to Silurian dolomite and limestone, Upper Ordovician to Silurian black graptolitic shale and Upper Ordovician to Middle Devonian limestone and dolomite, (units 9, 10 and 15, respectively, Green *et al.* 1968). Intrusive Cretaceous quartz monzonite is exposed on the southeast corner of the property. Galena, sphalerite, chalcopyrite, arsenopyrite, pyrite and possibly stibnite occur in a skarn adjacent to the intrusion.

CURRENT WORK AND RESULTS

Prospecting and a geochemical soil survey were conducted over the claim group. Soil samples collected from a 800 X 200 foot grid were analyzed for copper, lead and zinc.

Prospecting outlined two small mineralized skarn zones 600 feet apart along the limestone-quartz monzonite contact. Extensive geochemical anomalies were not outlined by the soil survey and S.E.R.E.M. did no further work on the property.

KEN		WO ₃
Tyee Lake Resources Ltd.	Titan-Polaris Mines Ltd.,	³ 105 0/8
Suite 1930,	Suite 703,	63°15'N, 130°08'W
1055 West Hastings St.,	535 Thurlow St.,	
Vancouver, B.C.	Vancouver, B.C.	

REFERENCE

Blusson (1971).

PROPERTY

KEN 31-52, 60, A68001-23.

LOCATION

The KEN group is in the Macmillan Pass area, 120 miles northeast of Ross River, Y.T. The Canol Road is 'open' from Ross River to Macmillan Pass where an access road, heading 8 miles north to Amax's Mactung property (below p. 158) adjoins the north side of the KEN claims. A gravel airstrip at Macmillan Pass is less than 10 road miles from the claims.

HISTORY

The KEN group was recorded in May 1973.

DESCRIPTION

The KEN claims are located near the eastern boundary of the Selwyn Mountains, a northwest trending belt of Helikian to Mississippian clastics and carbonates which have been intruded by Cretaceous quartz-monzonite. Argillite, shale and limestone which are thought to be part of the Ordovician-Silurian Road River Formation underlie the property. These units strike 090° and although complicated by local folding, generally dip 30° - 70° N. The southwest corner of the property is underlain by Cretaceous quartz-monzonite which has altered the argillite unit to hornfels. A northwest striking aplite dyke is exposed for 200 feet on the northeast portion of the claim group.

CURRENT WORK AND RESULTS

Prospecting, geological mapping, silt and soil samplings on the property during the 1973 season did not find tungsten mineralization in outcrop. Scheelite grains were found by panning stream sediments.

Geochemical analyses of silt and soil samples ranged from 10-330 ppm Cu, 60-4600 ppm Zn and 4-80 ppm WO_3 . Consistently low lead values ranged from 4-34 ppm. The cause of numerous spot highs and two broad anomalies, one located in the south-central part of the claims and the other in the northeastern corner have not yet been explained.

MACTUNG

Amax Northwest Mining Co. Ltd.
601 - 535 Thurlow St.,
Vancouver, B.C.

WO_3
3105 0/8
 $63^{\circ}17'N$, $130^{\circ}07'W$

REFERENCE

Blusson (1971).

PROPERTY

BORDER 11 T36325; PIX 1-10, 14-21, T37514-18, T37601-16; PUP 1-14, T37489-502;
GUT 1-24, A33627-58; GUN 1-8.

LOCATION

The Amax property straddles the N.W.T.-Y.T. border seven miles north of the Canol Road. The property may be reached by road from Ross River located 30 miles to the southwest, or from an airstrip in the 'Pass' a few miles from the claims.

HISTORY

Tungsten showings discovered in 1962 by J.F. Allan and staked by Southwest Potash Corporation, a subsidiary of American Metal Climax Incorporated were transferred to Amax Exploration Inc. in March 1967. Amax Exploration changed its name to Amax Potash in 1971 and in 1972 transferred the claims to Amax Northwest. Mining lease 2605, Lot 166 covers 1,423 acres of the property.

Surface sampling and mapping was undertaken in 1963 and 1964, followed by extensive diamond drilling totalling almost 35,000 feet in 1968, 1971, and 1972. At the end of 1972, Amax published ore reserves of 30 million tons of 0.9% WO_3 .

DESCRIPTION

Macmillan Pass lies within the Selwyn Mountains, a northwest trending belt of Hadrynian to Devonian clastics and carbonates which have been intruded by Cretaceous quartz monzonite. Scheelite pyrrhotite and minor chalcopyrite occurs in a pyroxene-garnet skarn developed in carbonate sediments of either the Lower Cambrian Sekwi Formation or Road River Formation. The mineralized unit dips 10° - 20° southwest and is approximately 80 feet thick except where it thins to five feet in a folded and faulted section.

CURRENT WORK AND RESULTS

In 1973, a 7 X 10 foot adit was driven 1300 feet into the mountain-side, 1000 feet of crosscutting was completed, a test stope 30 X 50 feet was opened and a 5 X 6 foot raise was driven 90 feet. A total of 18,000 cubic feet of rock was slashed to make drill sites for 5,400 feet of underground diamond drilling. Approximately 300 tons of ore was shipped for mill testing and 50 tons for crushing.

GODLIN LAKES DISTRICT

Tetrahedrite bearing quartz veins and lead-zinc showings were found some years ago in the Godlin Lakes area, which straddles the Canol Road 110 miles southwest of Norman Wells, the nearest supply and communications centre. Currently the most important exploration target in the area is lead-zinc in the Sekwi Formation. Most occurrences are small but high grade and appear to be localized in fractures produced by folding and thrusting. They are, therefore, mainly epigenetic deposits, and may represent metals remobilized into the dolostone from the associated shales which have over large areas excessively high contents of lead and zinc.

Extensive exploration in the Godlin Lakes district resulted in widespread property acquisition during 1972 and, mainly, 1973. A general description of the regional geology and access for the numerous properties in the district is provided here to avoid needless repetition. A map, Figure 10, shows the general geology of the district and the locations of the properties described below.

Godlin Lakes are suitable for float equipped aircraft, except during low water in late summer. To correct this situation, a small dam was constructed at the lake outlet. A rough landing strip near the lakes can be used by most types of bush aircraft.

Godlin Lakes lie near the centre of the Mackenzie Mountains, a broad arcuate belt of northwest trending Helikian to Cretaceous shelf carbonate and clastic formation. Dolostone, limestone, shale and sandstone, the predominant rock types locally contain mafic volcanic flows.

Structural features of the Mackenzie fold belt were produced mainly during the Columbian and Laramide Orogenies in Upper Cretaceous to Oligocene times. There is also evidence that deformation took place before the Cretaceous. The folds are typically broad and short with nearly flat crests and troughs and sharply upturned faulted flanks. Thrust faults formed on the flanks and in the axial regions of the folds produced an estimated 10% shortening.

PAM
Welcome North Mines Ltd.
301, 1035 West Pender St.,
Vancouver, B.C.

Pb, Zn
105 P/11
63°31'N, 129°05'W

REFERENCE

Blusson (1971).

PROPERTY

PAM 1-24, A75701-24.

LOCATION

The PAM claims are located less than three miles southeast of the Canol Road, 28 miles southwest of Godlin Lakes, (Figure 10, No. 1).

HISTORY

The 24 PAM claims were staked by Welcome North Mines in July, 1973 to cover showings found by regional prospecting.

DESCRIPTION

The western edge of the PAM claims is underlain by Cambrian and earlier quartzite (unit 12, Blusson, 1971) which is separated by a northwest striking, southwest dipping thrust fault from Sekwi Formation dolostone (unit 14, *ibid*) that underlies most of the claim group. The Sekwi dolostone and the underlying Lower Cambrian sandstone and siltstone (unit 13, *ibid*), have been folded into a northwest striking syncline.

CURRENT WORK AND RESULTS

Preliminary prospecting over the PAM claims found discontinuous zones of disseminated galena and sphalerite in fenestral fabrics within Sekwi dolostone.

NITE
Welcome North Mines Ltd.,
301, 1035 W. Pender St.,
Vancouver, B.C.

Cu
105 P/16
63°49'N, 128°13'W

REFERENCE

Blusson (1971).

PROPERTY

NITE 1-18, 20-23, A49222-43.

LOCATION

The NITE group is located 18 miles east of Godlin Lakes (Figure 10, No. 2).

HISTORY

A. John and P. Risby staked the NITE group in 1972. It was acquired by Welcome North Mines in 1973.

DESCRIPTION

The NITE claims are underlain by carbonate beds of the Helikian Coppercap Formation, and clastic beds of the Hadrynian Rapitan Group. The 1500 foot thick Coppercap Formation is composed predominantly of intraformational breccia, bituminous limestone, and massive-banded grey limestone containing several cherty-dolomitic units in which cryptalgal structures have been recognized.

Copper mineralization, small thin anastomosing veinlets and disseminations of bornite, chalcopyrite, and tetrahedrite appear to be restricted to one of these cherty-dolomitic units near the top of the Coppercap Formation. Azurite, malachite and chrysocolla are found as secondary copper minerals.

The Coppercap Formation is overlain by an unnamed unit of buff to maroon coloured sandstone and jaspillite, approximately 650 feet thick. Unconformably over this lies lower and middle units of the Rapitan Group. Fragments of cupriferous shale and copper stained dolomitic pebbles are found in the basal conglomerate of the Lower Rapitan. Thin layers of green siltstone weakly disseminated with fine grained chalcopyrite can be found higher up in the Lower Rapitan sequence. The overlying Middle Rapitan, the youngest exposed on the claim block comprise ill-sorted greenish-brown conglomeratic sandstones.

CURRENT WORK AND RESULTS

The extent of mineralization is difficult to determine because of skree cover but preliminary prospecting by Welcome North has found mineralization in six specific beds over a stratigraphic interval of 2,000 feet. The NITE group was optioned by Abitibi Paper in September 1973, and continued geological exploration during 1974.

HORSESHOE
Welcome North Mines Ltd.
301, 1035 West Pender St.,
Vancouver, B.C.

Pb, Zn
105 P/6, 11
63°29'N, 129°14'W

REFERENCE

Blusson (1971).

PROPERTY

HORSESHOE 1-26, A68901-26	105 P/6
HORSESHOE 27-36, A68927-36	105 P/11

LOCATION

The HORSESHOE claims are located less than a mile south of the Canol Road, 30 miles southwest of Godlin Lakes, (Figure 10, No. 3).

HISTORY

The showings were found and staked in July, 1973 by P.S. White, a prospector for Welcome North Mines.

DESCRIPTION

The HORSESHOE claims are underlain by the Sekwi Formation which is in fault contact with black shale (units 14 and 16, Blusson, 1971).

Galena, sphalerite and pyrite is found in float along the shale-carbonate contact which strikes 140° and in the claim area occurs as rusty gossans. Outcrop is relatively poor and the extent of the mineralization cannot be readily determined.

CURRENT WORK AND RESULTS

Two trenches were dug into a rusty gossan in an attempt to expose mineralization along the shale-carbonate contact. The main trench (12" x 15" X33') exposed massive pyrite with minor galena and sphalerite in dolostone. A smaller trench 500 feet to the southwest exposed brecciated shaly dolostone, annealed by calcite, quartz, galena and minor sphalerite. The results of a geochemical soil survey over part of the property have not been reported.

COAL LICENCE NO. 25
Welcome North Mines Ltd.,
301, 1035 West Pender St.,
Vancouver, B.C.

Cu
105 P/10
 $63^{\circ}35'N$, $128^{\circ}40'W$

REFERENCE

Blusson (1971)

PROPERTY

Coal Licence No. 25.

LOCATION

The coal licence area is located 13 miles south of Godlin Lakes, (Figure 10).

HISTORY

Coal was first noted in this area by the Geological Survey of Canada (Blusson, 1971). Welcome North obtained coal exploration licence No. 25 in 1973.

DESCRIPTION

Coal occurs in cyclothems of Cretaceous shale, siltstone, sandstone and conglomerate (unit 30, Blusson, 1971) bounded by thrust faults to east and west, and overburden covered to the north and south. The unit has been intensely folded and locally dips are vertical.

CURRENT WORK AND RESULTS

Geological mapping of the main showings and measurement of two stratigraphic sections identified seven seams of coal, varying between two and ten feet in thickness. The seams vary in thickness along strike and have been found discontinuously over a strike length of 4,500 feet. Several samples tested had calorific values of 11,000 to 14,000 BTU/lb and contained 0.50% sulphur.

EMILY, ICE
Welcome North Mines Ltd.,
301, 1035 West Pender St.,
Vancouver, B.C.

Pb, Zn
105 P/10, 11
63°43'N, 128°56'W

REFERENCE

Blusson, (1971).

PROPERTY

EMILY 1-78, A77823-900
ICE 1-58, A54801-58

105 P/11
105 P/11, 10

LOCATION

The ICE and EMILY claims are located just north of the Canol Road, 14 miles southwest of Godlin Lakes, (Figure 10, Nos. 4, 5).

HISTORY

The claims were staked in August 1973 to cover showings found by Welcome North Mines Ltd's prospectors.

DESCRIPTION

The ICE claims adjoin the southeast side of the EMILY claims, and together form a northwest trending 136 claim block. The west part of the EMILY group is underlain by Cambrian and earlier quartzite which has been brought against Sekwi Formation dolostone (units 12 and 14, Blusson, 1971) by a northwest striking, northeast dipping thrust fault. On the northeastern part of the claim group, northwest striking Sekwi Formation is unconformably overlain by Middle Cambrian and younger recessive black shale (unit 16, *ibid*).

Fenestral fabrics in a dolostone unit of the Sekwi Formation, adjacent to a northwest striking thrust fault, contains irregular patches and vugs of galena and sphalerite. Some sections of this dolostone are highly mineralized and others barren. Minor amounts of pyrobitumen are disseminated throughout dolostones of the Sekwi Formation.

CURRENT WORK AND RESULTS

Prospecting, mapping and sampling of the EMILY claims detected three occurrences of mineralized float within Sekwi drusy dolostone adjacent to black calcareous shale. A grab sample from veins of amber coloured sphalerite, up to 2 inches wide, assayed 1.10% Pb and 58.3% Zn.

Similar work on the ICE group located seven major galena-sphalerite showings as much as 60 feet wide and 400 feet long in talus and bedrock of drusy Sekwi Formation. The best showing, Ice 9, reportedly assayed 8.2% Pb and 12.5% Zn over 30 feet.

Late in 1973, the ICE group was optioned to Abitibi Paper who plan to continue exploration on the claims in 1974.

ARN, TEE
Bethlehem Copper Corporation Ltd.,
Suite 2100,
1055 West Hastings St.,
Vancouver, B.C.

Pb, Zn
105° P/11, 14
63° 45' N, 129° 16' W

REFERENCE

Blusson (1971).

PROPERTY

ARN 1-82, A50201-60, A77801-22; TEE 1-77, A66222, 25-77, A65162-84.

LOCATION

The ARN and TEE claims lie 12 miles west of Godlin Lakes, (Figure 10, Nos. 6 and 7).

HISTORY

The TEE claims were recorded in February 1973, the ARN claims in August 1973 by Welcome North Mines Ltd. (N.P.L.) and optioned then to Bethlehem Copper in September 1973. Work had not previously been recorded on the property although Arrow Inter-America Corp. explored the area in 1972.

DESCRIPTION

The 82 ARN and 77 TEE claims form a contiguous northwest trending block 10 miles long and as much as 2 miles wide. The western part of the

group is underlain by northwest striking Cambrian orthoquartzite, argillaceous sandstone, and orange-weathering dolostone (units 12, 13 and 14 respectively, Blusson 1971). These Lower Cambrian sequences have been thrust against Middle Cambrian black calcareous shales (unit 16, *ibid*) along a northwest striking fault. A facies change from shale to Whittaker Formation dolostone (unit 19, *ibid*) occurs in the northern and eastern part of the claims. The Ordovician to Silurian age Whittaker Formation is overlain by the Silurian and Devonian Delorme dolostone and the Middle Devonian Sombre Formation dolostone (units 20 and 21, *ibid*).

CURRENT WORK AND RESULTS

Prospecting, geological mapping, soil sampling and trenching on the ARN and TEE claims outlined four layers of mineralized drusy dolostone as much as 100 feet thick within the Sekwi Formation. These layers occur discontinuously along a strike length of eight miles and without exception within 2000 feet of a northwest striking thrust fault which has brought Sekwi dolostone into contact with black calcareous Cambrian shale (unit 16, *ibid*).

The highest assays from bedrock samples taken across mineralized and unmineralized sections of the Sekwi Formation were 1.35% Pb, 1.12% Zn and 0.07 oz/ton Ag over 60 feet, obtained from the Tee 1 showing. Bedrock exposure on ARN 6 is sparse. A 30 X 3 X 4 foot trench did not encounter bedrock but a selected float sample from the trench assayed 4.75% Pb and 2.52% Zn.

LIN, RAK
Welcome North Mines Ltd.
301, 1035 West Pender St.,
Vancouver, B.C.

Pb, Zn
105 P/14
63°48'N, 129°26'W

REFERENCE

Blusson, (1971).

PROPERTY

LIN 1-21, A66201-21
RAK 1-12, A68063-74.

LOCATION

LIN and RAK claims are located 18 miles due west of Godlin Lakes, (Figure 10, Nos. 8 and 9).

HISTORY

The LIN claims were recorded in February 1973 and the RAK claims in June 1973. The LIN claims were staked to cover showings found by P. Risby whilst in the employ of Arrow Inter-America Corporation. The RAK claims were tied onto the LIN claims to cover the northwest extent of the mineralization.

DESCRIPTION

The northeastern portion of the LIN-RAK group is underlain by Cambrian and younger shale which grades laterally into Upper Ordovician and Silurian Whittaker Formation dolostone (units 16 and 19, Blusson 1971). The shale and dolostone units have been folded into an anticline which has a north-west striking fold axis. Cambrian and older quartzite (unit 12, *ibid*) faulted against the shale and dolostone by a northwest striking, southwest dipping thrust fault underlies the southwest portion of the LIN-RAK group.

CURRENT WORK AND RESULTS

Detailed prospecting and geological mapping on the LIN and RAK claims located three showings of galena and minor sphalerite in shear zones within Whittaker Formation dolostone immediately above the shale contact. The shear zones are generally perpendicular to the strike of the shale and dolostone units and the mineralization is characteristically narrow and discontinuous. However, one zone reaches a width of five feet and a length of 400 feet.

BEAR, TWIT
Cominco Limited,
200 Granville Square,
Vancouver 2, B.C.

Pb, Zn, Ag
106 A/3
64°02'N, 129°22'W

REFERENCE

Blusson (1971).

PROPERTY

BEAR 1-32, A49271-86; 511-26;
TWIT 1-73, A66001-73.

LOCATION

The BEAR-TWIT claims are located astride the Twitya River, 25 miles northwest of Godlin Lakes, (Figure 10, No. 16 & 17).

HISTORY

The BEAR claims were staked by B.Y. Kim for Arrow Inter-America Corporation in July and August, 1972. Arrow Inter-America assigned them to P. Risby who transferred them to Welcome North Mines early in 1973. Welcome North staked the TWIT claims in February, 1973 to cover possible extensions of the mineralization on the BEAR claims. Cominco optioned the block in the spring of 1973.

DESCRIPTION

The Godlin Lakes lies within the Mackenzie Mountains, a northwest trending arcuate belt of Helikian to Cretaceous carbonates and clastics.

Geology maps covering the claim area have not been published but extrapolations from adjacent areas suggest the claims are underlain by Ordovician, Silurian and Devonian dolomite, limestone and shale. These units have been folded into northwest striking synclines and anticlines. The northwest striking thrust faults prevalent to the southeast continue across the BEAR-TWIT claims.

Three basic types of mineralization, vein, breccia cement, and replacement have been recognized in the Upper Ordovician and Silurian Whitaker Formation, dolomite. Vein type mineralization, galena, sphalerite and minor tetrahedrite within a quartz-calcite matrix occurs in fractures striking approximately perpendicular to the bedding. The galena and sphalerite are typically coarse-grained with galena cubes as much as one inch across and sphalerite crystals three inches long being found. Mineralized veins may be as much as two feet wide and 20 feet long and are characteristically erratic and discontinuous. Spacing between individual veins varies from less than a foot to up to 20 feet. A grab sample from one vein assayed 7.5% Pb and 7.57 oz/ton Ag.

Breccia type mineralization is low grade, less than 5% lead-zinc by visual estimate. Fine-grained disseminated sphalerite and minor galena occurs in the breccia which has a mottled appearance with the dark coloured breccia chunks rimmed by lighter material near the fractures. The breccia pieces range from one to two cm. in width. A bright, resinous yellow mineral which may form on the weathered surface has been identified by Welcome North's geologists as the cadmium mineral greenockite (CdS).

The third mineralization type consists of aggregates of fine-grained sphalerite and minor galena replacing fossils and fine-grained disseminated galena and sphalerite replacing host rock, a dark, fairly coarse dolomite containing elongated blebs of white, coarsely crystalline calcite which has replaced the fossils.

Gossans have not formed over the mineralization so it is essential to look at fresh exposures to see mineralization, and even then the sphalerite may be difficult to recognize.

CURRENT WORK AND RESULTS

Newcastle Explorations Limited conducted a soil geochemical survey over the property for Cominco. Samples of the B-horizon, taken every 200-foot along lines 400 feet apart, were analyzed by atomic absorption for lead, zinc, copper and silver. Background, threshold and anomalous values were calculated from the data. Numerous spot anomalies were outlined and are thought to indicate localized, erratic mineralization. A large anomaly in the Twitya River valley immediately downslope of the main BEAR-TWIT showings was attributed to downslope transportation of base metal ions from the main showing rather than *in situ* mineralization.

The showing was tested by 934 feet of X-ray drilling in 14 holes averaging between 60 to 90 feet in depth. This drilling intersected sphalerite and galena in narrow widely spaced fractures cross-cutting the dolostone. However, in one hole, a 12-foot section assayed 6.3% Pb and 9.0% Zn.

AJ
Welcome North Mines Ltd.
301, 1035 West Pender St.,
Vancouver, B.C.

Pb, Zn
106 B/16
64°48'N, 130°35'W

REFERENCES

Blusson (1971).

PROPERTY

AJ 1-30, A69501, 34-35, 600, 737-58, A50994-97.

LOCATION

The AJ claims are located 55 miles northeast of Bonnet Plume Lake, 85 miles northwest of Godlin Lakes and 110 miles north of Macmillan Pass.

HISTORY

The AJ claims recorded in October 1973, cover mineralization found during Welcome North's regional exploration program. No previous work has been reported on this area.

DESCRIPTION

The AJ claims lie within the Mackenzie Mountains in an area for which there are no published geology maps. Cambrian to Devonian dolostone limestone, shale and sandstone formations which have been mapped further south probably extend across the claim group.

CURRENT WORK AND RESULTS

Preliminary prospecting of the claim group discovered lead-zinc mineralization but no details have been reported.

DICK, LAN
Welcome North Mines Ltd.
301, 1035 West Pender St.,
Vancouver, B.C.

Pb, Zn, Ag
105 P/14
63°52'N, 129°20'W

REFERENCE

Blusson (1971).

PROPERTY

DICK 1-36, A65401-36;
LAN 1-24, A66171-94.

LOCATION

The DICK and LAN claims lie 18 miles west of Godlin Lakes, (Figure 10, Nos. 10, 11).

HISTORY

The claims were staked in early 1973 for Welcome North Mines as a result of prospecting in 1972.

DESCRIPTION

On the DICK group, a northwesterly striking, easterly dipping fault has brought Sombre Formation dolostone into contact with Middle Cambrian shale (units 16 and 21, Blusson 1971). The LAN group, an extension of the DICK group, is partially underlain by a fault wedge of Sekwi Formation dolostone.

Secondary lead-zinc minerals, mainly cerussite and smithsonite, are found on a skree slope and in outcrop on the DICK claims. This mineralization is within the Sombre Formation dolostone in cross fractures adjacent to the major northwesterly striking fault.

On the LAN claims, massive galena occupies cross fractures striking 050° and dipping 80° N in Sekwi Formation dolostone. The fractures can reach a width of ten inches, are discontinuous and variably spaced and have a maximum strike length of less than 100 feet.

CURRENT WORK AND RESULTS

Detailed prospecting, mapping and sampling on the DICK-LAN property discovered eight showings on the DICK claims and five showings on the LAN claims. Chip samples from LAN No. 1 showing assayed 5.45% Pb and 6.28% Zn over 4.5 feet and 22.7% Pb and 4.56% Zn over 2 feet. A chip sample from DICK No. 3 showing assayed 3.85% Pb and 43.86% Zn over 10 feet. A grab sample from DICK No. 2 assayed 21.87% Pb and 29.99% Zn.

DAL, RUS
Hudson Bay Exploration and
Development Company Ltd.,
P.O. Box 28, Toronto Dominion Centre,
Toronto 1, Ontario.
M5K 1B8

Pb, Zn
105 P/13, 14
 $63^{\circ}55'N$, $129^{\circ}29'W$

REFERENCE

Blusson (1971).

PROPERTY

RUS 1-36, A67401-36
DAL 1-20, A69451-70

105 P/13, 14
105 P/14

LOCATION

The DAL group is located 20 miles west of Godlin Lakes and the RUS group located 4 miles west of the DAL group, (Figure 10, No. 12).

HISTORY

The RUS claims were recorded by Hudson Bay in March, 1973. The DAL claims were recorded by Vestor Explorations Ltd. in July, 1973 and were optioned by Hudson Bay. No previous work has been reported on these claims.

DESCRIPTION

The DAL claims are underlain by northwest striking, northeast dipping carbonate units of Devonian to Ordovician age. The southeast part of the claim group is underlain by Whittaker Formation dolostone which in turn is overlain by dolostones of Delorme Formation and Sombre Formation (units 19, 20 and 21, respectively, Blusson 1971).

The RUS claims are underlain by Sombre Formation dolostones, Arnica Formation dolostones and Landry Formation limestone (units 21, 22, and 23, respectively, *ibid*) all striking northwest and apparently dipping to the northeast.

CURRENT WORK AND RESULTS

Detailed prospecting and a stream sediment geochemical survey on the property failed to locate significant mineralization.

DEE, FALL, QUEST
Bethlehem Copper Corporation Limited,
2100 - 1055 West Hastings Street,
Vancouver 1, B.C.

Pb, Zn, Ag
105 P/14
63°55'N, 129°28'W

REFERENCE

Blusson (1971).

PROPERTY

DEE 1-37, FALL 1-10, A49545-48, 55-66, A65001-10, 301-10, A66437-72;
QUEST 1-26, A68037-62.

LOCATION

This property (No. 13 on Figure 10) is located 18 miles northwest of Godlin Lakes.

HISTORY

The FALL claims were staked by N.J. Dircks in September 1971 to cover lead-zinc mineralization found by Arrow Inter-America Corporation who later withdrew from the area and transferred ownership to P. Risby. The claims were obtained by Welcome North Mines who staked the DEE and QUEST claims over possible extensions of the FALL mineralization. Bethlehem Copper Corporation Ltd. optioned the DEE-FALL-QUEST group from Welcome North Mines in June 1973.

DESCRIPTION

The stratigraphic sequence on the property includes Middle Devonian Headless Formation, argillaceous limestone, Landry Formation limestone, Arnica Formation dolostone, Sombre Formation dolostone, Delorme Formation dolostone, Whittaker Formation dolostone and calcareous shale (respectively units 24, 23, 22, 21, 20, 19 and 16, Blusson 1971) which underlie the claims from northeast to southwest. A northwest striking thrust fault cutting across the southwest of the DEE-FALL claims repeats parts of the Whittaker and Sombre Formations.

CURRENT WORK AND RESULTS

Prospecting and geological mapping of the DEE, FALL and QUEST groups and trenching and rock geochemical sampling on the FALL claims outlined two lead-zinc showings in Whittaker dolostone adjacent to a thrust fault. The D 1 or main showing occurs at the intersection of two thrust faults near the Whittaker-Sombre contact, in bleached and brecciated Whittaker dolostone and consists of a thin layer of smithsonite fine grained sphalerite and galena annealing a dolomitic breccia. Locally, bornite, calcite and fluorspar occur in place of sphalerite and galena. Analyses of samples indicates a reversal of the lead-zinc ratio towards the margins of the breccia.

Sampling of outcrops adjacent to the showing indicated a low metal content in the rock. A cross-shaped trench (one leg 50 X 4 X 3 feet, the other leg 35 X 3 X 3 feet) was dug across the showing. The long leg of the trench which was across the strike of the rocks assayed 11.9% Pb and 15.2% Zn over 50 feet while the short leg assayed 4.2% Pb and 10.8% Zn over 35 feet. Silver values were less than 1 oz/ton.

The D3 showing is located within brecciated Whittaker dolostone, 2800 feet north of the D1 showing. Smithsonite occurs in small pods along a shear zone parallel to the main thrust fault. A 15-foot channel sample across the D3 showing averaged 1.1% Pb and 9.6% Zn with the best 5-foot interval assaying 2.68% Pb and 24.82% Zn.

A rock geochemical sampling programme between the D1 and D3 showings attempted to outline further mineralization but lead-zinc values were all below 1%.

Tracing of mineralized float in talus on the QUEST claims discovered small pods of red or green fractures in Delorme dolostone. The fractures occur in the saddle of a small intraformational fold which affects three to four 10-foot beds of Delorme Formation. The fold axis strikes 10° and plunges steeply northeast.

ART, EKWI AND SNOW, RAIN
Conwest Exploration Company Ltd.
85 Richmond St. West,
Toronto11, Ontario.

Pb, Zn
105 P/14
63°51'N, 129°11'W

REFERENCES

Blusson (1971); Gabrielse and Reesor (1964).

PROPERTY

ART 1-115, SNOW 1-8, A49244-53, 81-85, 63-69, A16150;
EKWI 1-63, A65901-63;;RAIN 1-19, A66281-99.

LOCATION

The ART-EKWI group lies 12 miles west and the RAIN-SNOW group, 20 miles northwest of the Godlin Lakes, (Figure 10, Nos. 23, 18).

HISTORY

The ART group was staked by P. Risby in August 1972 and transferred to Welcome North Mines in the spring of 1973. The EKWI claims were staked in February 1973 around the ART claims to cover possible extensions of the mineralization. Welcome North Mines optioned the ART and EKWI groups to Conwest Exploration in June 1973.

The SNOW group was staked by B.Y. Kim in June, 1972 and transferred to P. Risby in March 1973. Risby transferred the claims to Welcome North Mines who optioned them to Conwest in the summer of 1973.

Conwest had relinquished the option on the ART-EKWI-and RAIN-SNOW groups by September 1973.

DESCRIPTION

The ART-EKWI claims are underlain by Devonian limestone, dolostone and shale, Arnica Formation dolostone, Landry Formation limestone, Headless Formation limestone and Nahanni Formation limestone. These formations form part of a broad northwest trending syncline on the northeast side of a steeply east dipping, northwest striking thrust fault which cuts across the property (Blusson, 1971).

To the southwest, Headless limestone, Nahanni limestone and Devonian shale have been faulted by a branch of the main thrust fault. On the northwest side of the property, these formations have been folded into an over-turned anticline.

Mineralization in the Landry Formation between 500 and 1000 feet east of the major thrust fault is believed to be controlled by "a high-angle branch fault of the main thrust".

Number 1 showing consists of mineralized skree containing smithsonite and minor galena.

Numbers 2, 3 and 4 showings contain galena and sphalerite which, with calcite, have filled solution-enlarged fractures near the base of the Landry Formation. Minor amounts of smithsonite and cerussite are also present.

The northeast corner of the RAIN-SNOW group is underlain by Whitaker dolostone which is overlain to the southwest by a stratigraphic succession comprising Delorme limestone, Sombre dolostone, Arnica dolostone, Landry limestone and Headless limestone. The Sombre Formation forms the core of a northwest striking syncline with a parallel striking fault on its southwest side. This fault brings the Sombre Formation into contact with the overlying Arnica Formation. All formations, on the property, to the west of the fault dip 45° to 75° to the southwest.

Galena and sphalerite occur in narrow fractures and solution cavities within the Sombre and Arnica Formations near the fault. The sphalerite is either a distinctive red or, more commonly, a pale vitreous green.

CURRENT WORK AND RESULTS

Prospecting, trenching, chip sampling, geochemical sampling and geological mapping on the ART-EKWI group confirmed the presence of the four mineralized zones. Two trenches which failed to reach bedrock were blasted on the No. 1 showing and revealed abundant pieces of smithsonite containing minor galena. A geochemical survey of the skree slope fines obtained values for up to 12,000 ppm Pb and 41,500 ppm Zn. These values were not interpreted as evidence covered mineralization.

Prospecting trenching, stream sediment sampling and mapping on the RAIN-SNOW group outlined four mineralized zones consisting of minor amounts of galena and red sphalerite as thin fracture fillings. The No. 2 zone, the largest, consists of mineralized skree. Three trenches blasted in this zone did not expose bedrock. The only anomalous sample, of a stream sediment survey, was collected at the mouth of stream which cuts the main showing.

KEG
Dynasty Explorations Ltd.
330 - 355 Burrard St.,
Vancouver, B.C.

Pb, Zn
105 P/14
 $63^{\circ}59'N$, $129^{\circ}14'W$

REFERENCE

Blusson (1971).

PROPERTY

KEG 1-39, A67341-57, A68089-100, 200, 358-66.
KEG 76-83, A65501-08.

LOCATION

The KEG group is located 18 miles northwest of Godlin Lakes, (Figure 10, No. 19).

HISTORY

The claims were staked in June and July, 1973 by Welcome North Mines Ltd. to cover showings and mineralized float discovered by prospecting. Dynasty Explorations Limited optioned the claims in July 1973.

DESCRIPTION

The KEG mineral claims cover a shallowly dipping dolostone succession of Ordovician to Silurian, Sunblood and Whittaker Formations (Unit 17, 18 and 19, Blusson, 1971). These units are gently folded along a northerly trending anticlinal axis and cut by a number of near vertical northwest trending faults. In the main area of interest, sulphide mineralization is seen as loose pieces of breccia made up of chert and dolomite fragments set in a pyrite-sphalerite-quartz-dolomite matrix.

CURRENT WORK AND RESULTS

Prospecting, geological mapping, soil sampling and an EM survey, followed by five diamond drill holes totalling 1600 feet tested the mineralized float areas, gossan occurrences and lead-zinc soil anomalies. Mineralization of economic grade was not intersected in any of the drill holes but one hole returned 63 feet that assayed 3.26% Zn.

TAP
Welcome North Mines Ltd.,
301, 1035 West Pender St.,
Vancouver, B.C.

Pb, Zn
105° 1' 14"
63° 57' N, 129° 11' W

REFERENCE

Blusson (1971).

PROPERTY

TAP 27-75, A67367-400, A68701-15.

LOCATION

The TAP group is located 18 miles northwest of Godlin Lakes, (Figure 10, No. 20).

HISTORY

The TAP claims were staked by Welcome North Mines in July 1973 to cover mineral showings discovered during regional prospecting.

DESCRIPTION

The TAP group is located on the southwest limb of a northwest striking syncline. Middle Ordovician Sunblood Formation dolostone and limestone (unit 18, Blusson, 1971) underlies the northwest portion of the TAP claims. Towards the southeast side of the claim group, the Sunblood Formation is overlain by Upper Ordovician and Silurian Whittaker Formation dolostone and Silurian and Devonian Delorme Formation dolostone. A northwest striking thrust fault cuts the western portion of the claim group.

CURRENT WORK AND RESULTS

Prospecting and geological mapping on the claim group located sporadic pyrite-sphalerite mineralization over a strike length in excess of 4,000 feet along a major fault zone. Additional zinc-lead mineralization was found in Whittaker Formation dolostone adjacent to the fault.

CAL, REEF, SCAT, ZEE
Welcome North Mines Ltd.,
301, 1035 West Pender St.,
Vancouver, B.C.

Pb, Zn
105 P/14, 15
63°55'N, 129°00'W

REFERENCE

Blusson (1971).

PROPERTY

REEF 1-61, A65311-41, 467-96; SCAT 1-69, A66101-69;
CAL 1-10, A68027-36; ZEE 1-30, A75731-60.

LOCATION

The ZEE, SCAT, REEF and CAL claims are located 7 miles northwest of Godlin Lakes, (Figure 10, Nos. 21, 22, 24, 25, 26).

As the ZEE, SCAT, REEF and CAL claims cover a large area, the local geology of each will be described separately.

HISTORY

The SCAT claims were staked by Welcome North Mines Ltd. in March 1973 to cover lead-zinc float found by former Arrow Inter-America Corporation prospector, P. Risby during the previous field season. The REEF, CAL and ZEE claims were staked during the 1973 field season as additional mineral showings similar to the SCAT mineralization were found.

DESCRIPTION

The ZEE group located on the east limb of a 15° southeast plunging syncline is underlain by rock units striking to the northwest and dipping to the southwest. Lower Devonian Whittaker Formation dolostone the oldest unit grades vertically into the Middle Devonian Delorme Formation dolostone and limestone which is overlain by Sombre Formation dolostone which in turn is overlain by Arnica Formation dolostone (units 19, 20, 21 and 22, respectively, Blusson 1971). A thin unit of Landry Formation limestone overlies the Arnica Formation and is overlain by Headless Formation dolostone (units 23, 24, *ibid*). The youngest units, Nahanni Formation limestone and Middle Devonian shale (units 25, 26, *ibid*) are exposed on the southeast corner of the claim block.

The SCAT claims are underlain by northwest striking Middle Devonian units of the Arnica, Landry, Headless, and Nahanni Formations. A northwest striking, 80° east dipping thrust fault cuts the southeast side of the property bringing northwest striking units of the Arnica and Landry Formations southwest of the fault into contact with similar rocks northeast of the fault. The youngest strata, the Nahanni Formation, underlies the northeast portion of the property.

The REEF and the CAL claims are located along a northwest striking, steeply east dipping thrust fault which brings Headless limestone to the southwest into contact with the Arnica and Landry Formations to the northeast. Northeast of the thrust fault the property is underlain by Middle Devonian Arnica dolostone which is overlain by Landry limestone. The beds young to the southwest away from the fault where the claims are underlain by Headless limestone, Nahanni limestone and Middle Devonian shale.

Galena, sphalerite and smithsonite occur in cavities and vuggy horizons within Arnica dolostone and Landry limestone and in fractures and shear zones related to the thrust faults. Eleven showings were found on the SCAT claims, most of them fracture fillings in Landry limestone. Grab samples from these showings assayed as much as 4.80% Pb and 45.6% Zn. A sample across 30 feet of showing, 5 assayed 0.02% Pb and 1.09% Zn.

Two showings were found on the ZEE claims. The main one, showing 12A contains sphalerite in an irregular two foot wide zone over a strike distance of 50 feet. A grab sample from this zone assayed 0.04% Pb and 49.9% Zn.

Two mineralized zones on the REEF claims were reported, one in outcrop the other in talus. REEF 1 showing, galena, sphalerite and smithsonite in a 50 foot wide gossan was traced for several hundred feet where it became obscured by detritus. In this showing, sphalerite replaces fossils and cements a dolomitic breccia. A sample from this showing assayed 6.85% Zn and a trace of lead. The No. 2 showing consists of fragments of Arnica dolostone containing galena, sphalerite and smithsonite-cerussite in fractures. A grab sample of the mineralized float assayed 1.05% Pb and 6.27% Zn. The CAL showings on strike to the southwest of the REEF showings have a similar geology. A grab sample taken from the main showing assayed 0.04% Pb and 61.7% Zn.

CURRENT WORK AND RESULTS

The ZEE, SCAT, REEF and CAL claims were prospected and geologically mapped and silt and soil samples were taken along the major drainage channels.

Over 30 mineral showings were found on these claims, the majority as float in the talus slopes. These widely spaced occurrences seem to be intimately associated with the Arnica, Landry and Nahanni Formations adjacent to thrust faults. Soil samples adjacent to showings had values as high as 12,000 ppm Pb and 11,000 ppm Zn. Silt sample geochemistry found anomalous values adjacent to some of the showings but did not appear to be a useful tool in this environment.

TET, RAP
Bethlehem Copper Corporation Ltd.,
2100-1055 West Hastings St.,
Vancouver 1, B.C.

Cu, Ag, Pb, Zn
106 A/1
64°03'N, 128°17'W

REFERENCE

Blusson (1968).

PROPERTY

RAP 1-73, A66301-73; TET 1-35, A16118-20, 29-64, 72, A49201-9.

LOCATION

The TET and RAP claims lie near the confluence of the Godlin and Ekwi Rivers, 25 miles northeast of Godlin Lakes, (Figure 10, Nos. 28, 29).

HISTORY

The TET claims, staked by P. Risby in August 1972 for Arrow Inter-America Corporation, later reverted to P. Risby who transferred then to Welcome North Mines who staked 73 RAP claims in February 1973 and a further 27 RAP claims in May 1973 to cover possible extensions of the TET mineralization. The TET-RAP group was subsequently optioned to Bethlehem Copper.

DESCRIPTION

This area lies along the eastern limit of the Mackenzie Mountains, a northwest striking arcuate belt of thrust faulted Proterozoic and Paleozoic sedimentary strata. The central portion of the claim group is underlain by northwest striking Little Dal dolostone in fault contact with Nahangi and Headless Formation limestone and dolostone. These beds dip from 18° to 70° to the southwest and strike parallel to the northwest striking thrust faults. These units are in contact with Katherine Formation orthoquartzite to the northeast and with Lower Rapitan mudstone to the southwest.

CURRENT WORK AND RESULTS

Prospecting, trenching, geological mapping, geochemical surveys and drilling on the TET-RAP claims outlined three copper showings, A, B, and C and 4 lead-zinc showings D, E, F and G. Showing A (the main showing) consists of tetrahedrite associated with quartz veins, developed in fractures and breccia within Little Dal dolostone. Mineralization occurs along a strike length of 2,000 feet within a fracture system striking 140° and dipping 65° northeast. Erratic high grade pods of tetrahedrite adjacent to lean or barren sections and minor galena and sphalerite are associated with quartz veins in the hang and foot walls of the main zone. One trench 60 X 3 X 3 feet and two 30 X 3 X 3 feet trenches were blasted in this zone and chip samples taken. Assays 0.95 oz/ton Ag, 0.73% Cu and 0.14% Zn over 40 feet were obtained from the 10 foot trench and 1.40 oz/ton Ag, 1.17% Cu and 0.21% Zn over 30 feet from one of the shorter ones.

Zone B located 3,000 feet east of zone A consists of tetrahedrite in a quartz annealed breccia for 1,900 feet along a fracture system striking 130° and dipping 45° to the northeast within Little Dal Formation dolostone. Two trenches blasted across the strike of the fracture zone were chip sample along their length. Trench 1 (80' X 2.5' X 2') assayed 0.23 oz/ton Ag, 0.58% Cu and 0.25% Zn over 80 feet and trench 2 (40' X 2' X 2.5') located 26 feet to the southeast assayed 1.21 oz/ton Ag, 1.71% Cu and 0.23% Zn over a 5-foot section.

Showing C located 9,500 feet east of Showing B, measures 700 by 200 feet. It consists of minor tetrahedrite associated with pyrite, limonite and gypsum along fractures in a breccia zone within argillaceous dolostone of the Little Dal Formation. Two small trenches were dug into the oxidized material and chip samples taken. The best 10-foot section assayed 0.14 oz/ton Ag, 0.2% Cu and 0.03% Zn. The mineralized showings D, E, F and G which consist mainly of galena and sphalerite concentrated along fractures within dolostone were considered too sparsely mineralized to warrant further work.

Two diamond drill holes totalling 601 feet were drilled on Showing A. The best intersection assayed 0.13 oz/ton Ag, 0.15% Cu and 0.04% Zn over 5 feet.

A soil geochemical survey tested the covered areas between the main showings.

Samples were taken from the B-horizon at a depth of approximately 10 inches every 400 feet along lines 800 feet apart. The -80 mesh fraction was analyzed for copper and zinc by atomic absorption and three anomalies were outlined. No. 1 lies 500 feet east of Showing A, No. 2 lies 1200 feet north of Showing B and No. 3 lies 500 feet west of Showing B. Both the No. 1 and No. 2 anomalies are located downhill from nearby mineralization and are a result, at least in part, of ground water and soil creep effects which have created clastic and hydromorphic lateral anomalies. The No. 2 anomaly covers 1,200 by 500 feet of a predominantly overburden covered area and could result from mineralization similar to that found in showings A and B.

NOR, MAN, WELLS
Rio Tinto Canadian Expl. Ltd.,
P.O. Box 49108,
Vancouver, B.C.
V7X 1G4

Pb, Zn, BaSO₄, CaSO₄, 2H₂O
106 A/1
64°07'20"N, 128°23'30"W

REFERENCE

Blusson (1971).

PROPERTY

NOR 1-36, A67001-36;
MAN 37-72, A67037-72;
WELLS 73-100, A67073-100.

LOCATION

The NOR, MAN and WELLS claims are located 20 miles northeast of Godlin Lakes, just south of the point where the Canol Road crosses the Twitya River, (Figure 10, No. 27).

HISTORY

The property was first staked in March 1973 on showings reported 10 years previously. No work was done on the ground before 1973.

DESCRIPTION

The claims lie within the Mackenzie Mountains, a northwest striking arcuate belt of Helikian to Cretaceous clastics and carbonates and are underlain by the Helikian Rapitan Formation. The lower unit of this formation outcrops on the western edge of the claim block where it strikes 150° and dips 30° E. Barite and gypsum veins occur sporadically over the property. The Middle Rapitan unit contains disseminated pyrite which has been oxidized in weathered outcrops.

CURRENT WORK AND RESULTS

Prospecting and silt sampling outlined two showings. The western showing consists of galena, minor sphalerite and chalcopyrite in a barite vein which cross-cuts limestone. The mineralization is exposed for a strike length of 600 feet and varies in width from 10 feet averaging 12% combined lead-zinc to less than 2 feet averaging 1% lead-zinc. A second 3 foot wide barite vein consists of tetrahedrite, minor galena and sphalerite over a strike length of 3,000 feet. Samples from this vein assayed less than 0.2% Cu.

JAN, RIS
Welcome North Mines Ltd.,
301, 1035 West Pender St.,
Vancouver, B.C.

Pb, Zn
106 A/12; B/9
64°37'N, 130°05'W

REFERENCE

Blusson (1971).

PROPERTY

RIS 1-36, A50441-76

106 B/9

JAN 1-24, A50421-40; A69596-99

106 A/12

LOCATION

The RIS and JAN claims are located 70 miles northwest of Godlin Lakes, 60 miles east-northeast of Bonnet Plume Lake and 100 miles north of Macmillan Pass.

HISTORY

The RIS and JAN claims were staked in September 1973 to cover mineralization discovered during regional exploration by Welcome North.

DESCRIPTION

The claims lie within the Mackenzie Mountains, a northwest trending arcuate belt of Helikian to Cretaceous clastics and carbonates. No regional geology maps have been published on this area as yet but presumably the geology consists mainly of Cambrian to Devonian dolomite, shale and sandstone.

CURRENT WORK AND RESULTS

Preliminary prospecting has outlined lead-zinc mineralization on these properties. No further details have been reported.

NIC, JIM, DOR
Welcome North Mines Ltd.,
301, 1035 West Pender St.,
Vancouver, B.C.

Pb, Zn
106 B/8, 9
64°28'N, 130°30'W

REFERENCE

Blusson, (1971).

PROPERTY

NIC 1-20, A69571-90

106 B/8

JIM 1-16, A69541-56; DOR 1-15, A69533, 57-70

106 B/8, 9

LOCATION

The contiguous JIM and NIC claims are located 70 miles northwest of Godlin Lakes, 95 miles due north of Macmillan Pass and 50 miles east of Bonnet Plume Lake. The DOR claims are located 2 miles north of the JIM-NIC group and 12 miles southeast of the RIS claims.

HISTORY

The JIM, NIC and DOR claims were recorded in September 1973. No previous work has been reported on the area covered by these claims.

DESCRIPTION

This area lies within the Mackenzie Mountains, a northwest trending arcuate belt of Helikian to Cretaceous clastics and carbonates. No regional maps are available for the 106 B map-area at this time. The claims are probably underlain by Cambrian to Devonian dolostone, limestone, shale and sandstone.

CURRENT WORK AND RESULTS

Cursory prospecting hampered by snowfall located galena and sphalerite in localized fracture sets on the JIM and NIC claims. On the DOR claims the lead and zinc appears to be stratiform. No other details are currently available on these properties.

ALP

Dynasty Exploration Ltd.,
330-335 Burrard St.,
Vancouver, B.C.

Pb, Zn
106 B/1
64°03'N, 130°11'W

REFERENCE

Blusson, (1971).

PROPERTY

ALP 1-72, A74901-72.

LOCATION

The ALP claims lie 55 miles due north of Macmillan Pass, (Figure 10, No. 15). A small lake, locally called Mountain Lake, is located 12 miles west of the ALP group and may be reached by fixed-wing float-equipped aircraft.

HISTORY

The ALP claims were staked during 1973 as a result of a regional geochemical survey.

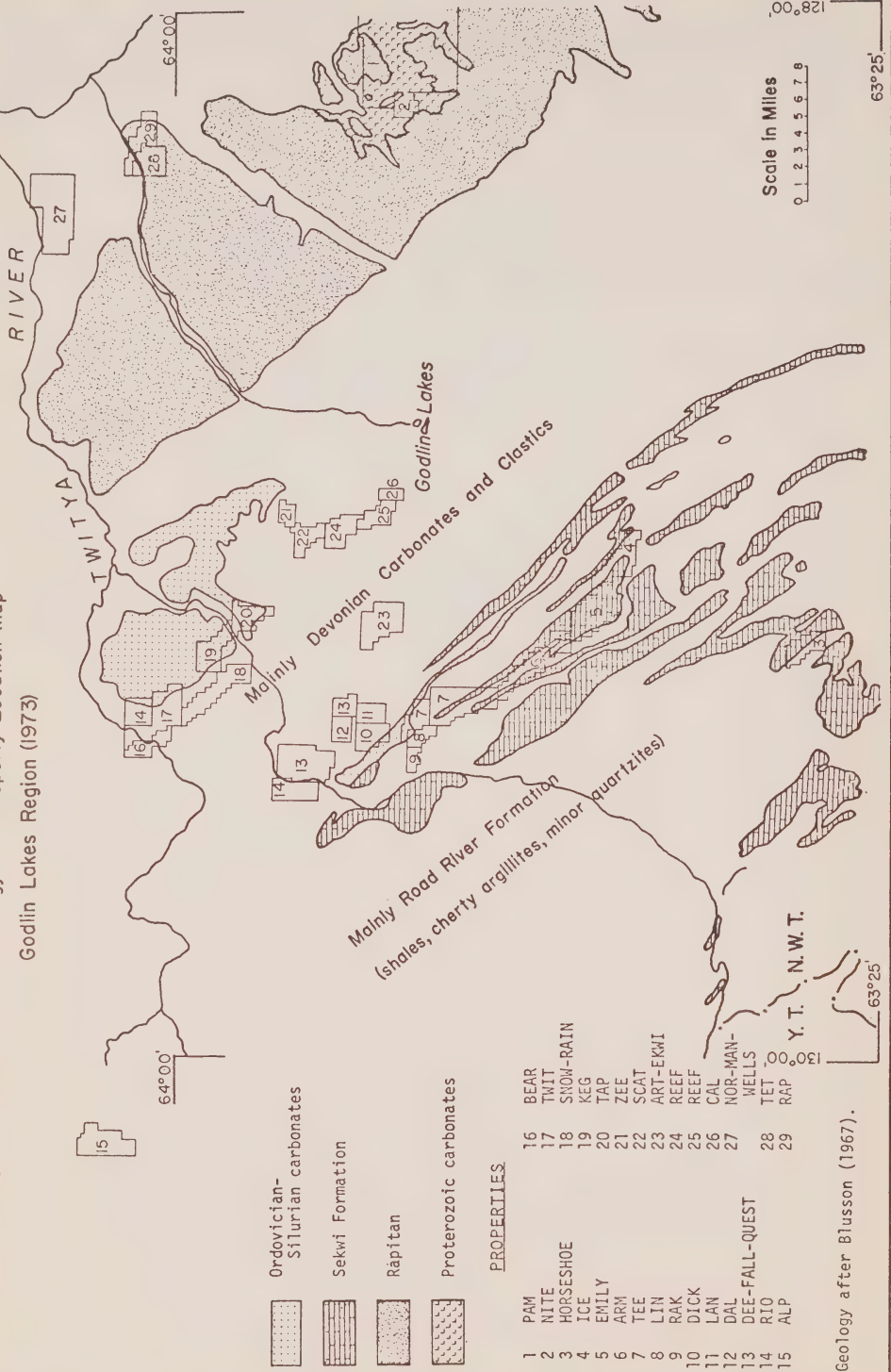
DESCRIPTION

This area is located within the Mackenzie Mountains, a northwest trending belt of Helikian to Devonian clastics and carbonates. No regional geological maps are available for this area (106 B) but it is reported that the ALP claims are underlain by Ordovician to Devonian carbonate and dolostone including a black silty dolostone containing disseminated galena.

CURRENT WORK AND RESULTS

A reconnaissance geochemical survey over the region followed by prospecting led to the mineral discoveries. The results of prospecting, geological mapping and geochemical soil sampling on the property have not been reported.

Figure 10. Generalised Geology and Property Location Map
Godlin Lakes Region (1973)



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NATIONAL TOPOGRAPHIC SYSTEM INDEX TO DESCRIPTIONS
OF PROPERTIES AND EXPLORATION PROGRAMS

<u>N.T.S.</u>	<u>COMPANY AND PAGE</u>
47-A-13	Aquitaine Company of Canada (33)
47-A-14	Aquitaine Company of Canada (33)
48-A-2	Global Arctic Islands Limited (34)
48-A-6	Global Arctic Islands Limited (35)
48-A-7	Global Arctic Islands Limited (35)
48-A-13	Global Arctic Islands Limited (36)
48-A-16	Global Arctic Islands Limited (36)
48-C-1	Kuhulu Creek Mining Corporation Limited (39); Mineral Resources International Limited (39)
55-C-4	Sik Sik Golden Copper Mines (28)
55-E	Noranda (22)
55-E-9	Aquitaine Company of Canada (10)
55-E-13	Canadian Superior (12)
55-E-15	Aquitaine Company of Canada (10)
55-F-13	Aquitaine Company of Canada (10)
55-K	Noranda (22)
55-K-2	Mont-Alta Projects Limited (13)
55-K-4	Conigas Mines Limited (15); Denison Mines Limited (15); W.H. Shenton (15)
55-K-5	Selco Mining Corporation Limited (16)
55-K-6	D.F. Hurd (17)
55-L	Noranda (22)
55-L-4	Canadian Superior (12); Freeport Canadian Exploration Company Company (18); Giant Yellowknife Mines (18)
55-M-11	Pan Ocean Oil (26)
55-M-12	Pan Ocean Oil (26)
55-M-13	Pan Ocean Oil (26)
55-N-13	Sik Sik Golden Copper Mines (28)
56-F-10	Aquitaine Company of Canada (28)
58-F-12	Cominco Limited (41)
58-F-14	Canadian Superior (43); Cominco Limited (41)
58-G-2	Canadian Superior (43)
58-G-3	Canadian Superior (43)
58-G-4	Canadian Superior (43); Cominco Limited (41)
58-G-6	Canadian Superior (43)

58-G-11 Arvik Mines Limited (42); Bankeno Mines Limited (42)
59-B Cominco Limited (45)
65-G-7 O'Brien Gold Mines (20)
65-G-8 O'Brien Gold Mines (20)
65-H Noranda (22)
65-H-16 Hudson Bay Exploration and Development (21)
65-I-1 Canadian Superior (12)
65-I-4 Columbian Northland Limited (25)
65-P-10 Pan Ocean Oil (26)
65-P-16 Pan Ocean Oil (26)
66-M-9 Perry River Nickel Mines (29)
66-N-5 Canadian Southern Petroleum Limited (30); Nemco Exploration
Limited (30); Perry River Nickel Mines (31); Rio Alto
Exploration Limited (31); Savanna Creek Gas and Oil (31)
68-H-2 Cominco Limited (45)
68-H-8 Cominco Limited (45); Kermac Investments Limited (47)
68-H-9 Cominco Limited (50)
68-H-10 Arvik Mines Limited (50); Bankeno Mines Limited (50)
69-A Cominco Limited (45)
69-B Cominco Limited (45)
69-H Cominco Limited (45)
75-D-15 Imperial Oil (53)
75-F-4 Wm. W. Kizan (54)
75-K-3 J.D. Larkin (55); J. McAvoy (55)
75-L-4 F. Diamion (59)
75-L-8 Hudson Bay Oil and Gas Company Limited (56)
75-L-9 Giant Yellowknife Mines (59)
75-L-15 Giant Yellowknife Mines (60)
75-L-16 Giant Yellowknife Mines (60)
75-M-2 Indian Mountain Metal Mines (68)
76-B-4 Windflower Mines Limited (N.P.L.) (70)
76-C-9 M. Kochowski (71); J. Magrum (71); L. Rocher (71)
76-D-3 Giant Yellowknife Mines (71)
76-F-1 Cominco Limited (73)
76-G-13 Cominco Limited (73)
76-M-11 Mr. James Brady (74)
77-A-3 Hope Bay Mines (75)
85-A-13 Pine Point Mines Limited (63)
85-B-15 Conwest Exploration Limited (66)

85-B-16	Newcomex Canadian Exploration Limited (66); New Park Mines Limited (66);
85-H-9	Fred Diamion (58)
85-H-10	Nor-Can Minerals Limited (57, 62)
85-H-15	Ecstall Mining Limited (97)
85-I-4	Nor-Can Minerals Limited (79); Terra Mining and Exploration Limited (78)
85-I-6	Anglo United Development Corporation Limited (81); D. Nickerson (80)
85-I-7	Ice Station Resources Limited (83); D. Nickerson (80)
85-I-11	F. Diamion (84); Great Plains Development Company of Canada Limited (85); James S. Turner (86); J.R. Woolgar (86)
85-I-12	Hidden Lake Mines Limited (88)
85-I-14	C. Vaydik (89)
85-N-1	Anglo United Development Corporation Limited (94)
85-N-8	Anglo United Development Corporation Limited (94)
85-O-3	Seaforth Mines Limited (90)
85-P-3	North Star Mines Limited (91)
85-P-6	Prosper Mines Limited (92)
85-P-7	Great Plains Development Company of Canada Limited (94)
86-B-12	Baron's Oil Limited (96)
86-C-12	B.P. Minerals Limited (99)
86-C-16	Denison Mines Limited (100)
86-D-15	Seaforth Mines Limited (102)
86-E-9	Duke Mining Limited (103); Terra Mining and Exploration Limited (107)
86-F-1	Denison Mines Limited (100)
86-F-6	Getty Minerals Company Limited (101)
86-F-7	Getty Minerals Company Limited (101)
86-F-8	Denison Mines Limited (105)
86-F-9	Getty Minerals Company Limited (101)
86-F-10	Getty Minerals Company Limited (101)
86-F-11	Getty Minerals Company Limited (101)
86-F-12	R.M. Bentley and Associates (108); Seaforth Mines Limited (104)
86-F-13	Port Syndicate (109)
86-H-15	Ecstall Mining Limited (97)
86-I-1	Ecstall Mining Limited (97)
86-I-2	Ecstall Mining Limited (97)
86-K-2	R.A. Lees (110); C. Molholm (110)
95-C-11	Manalta Coal Limited (121)

95-C-14 Manalta Coal Limited (121)
95-E Newmont Mining Corporation of Canada Limited (113)
95-E-2 W.L. Andrew (111)
95-E-12 Bralorne Pioneer Mines Limited (112)
95-F-8 Ecstall Mining Limited (115)
95-F-9 Union Oil Company of Canada Limited (114)
95-J-4 Union Oil Company of Canada Limited (114)
95-J-12 Union Oil Company of Canada Limited (114)
95-J-13 Cominco Limited (116); Union Oil Company of Canada Limited (114)
95-K-7 Union Oil Company of Canada Limited (114)
95-L Newmont Mining Corporation of Canada Limited (113)
95-O-4 Cominco Limited (117)
95-O-5 Giant Yellowknife Mines Limited (120)
95-O-6 Giant Yellowknife Mines Limited (120)
105-H-16 Canada Tungsten Mining Corporation Limited (122)
105-I-1 Acheron Mines Limited (124); Canex Placer Limited (126);
Cream Silver Mines Limited (124); TCL Exploration Group (125)
105-I-2 Canex Placer Limited (126)
105-I-5 Acheron Mines Limited (136)
105-I-6 Acheron Mines Limited (132, 133); Agilis Engineering
Limited (131, 136); Belmoral Mines Limited (148); Black Giant
Mines Limited (138); Claymore Resources Limited (147); Cominco
Limited (146); Dasson Copper Corporation Limited (144);
Grandora Exploration Limited (132); Highland Mercury Mines
Limited (135); D.J. Kennedy (135, 143); Maverick Mountain
Resources Limited (133, 137); Minas de Cerro Dorado Limited
(145); Placer Development Limited (141); Ramid International
Limited (133); Renton Management Limited (141); Vestor
Explorations Limited (139); Western Standard Silver Mines
Limited (140)
105-I-7 Minas de Cerro Dorado Limited (145)
105-I-11 Agilis Engineering (136); Morris Black (154); Corval Resources
Limited (149); Dynasty Explorations Limited (152); Mr. L. Hart
(150); Makao Development Company Limited (153); Renton
Management Limited (151); Vestor Explorations Limited (148)
105-I-12 Agilis Engineering (136); Canex-Placer Limited (153); Makao
Development Company Limited (153)
105-I-15 Dynasty Exploration Limited (155);
105-O-8 Amax Northwest Mining Company Limited (158); Titan-Polaris
Mines Limited (157); Tyee Lake Resources Limited (157)

105-P-6	Welcome North Mines Limited (162)
105-P-10	Welcome North Mines Limited (163, 164)
105-P-11	Bethlehem Copper Corporation Limited (165); Welcome North Mines Limited (160, 162, 164)
105-P-13	Hudson Bay Exploration and Development Company Limited (170)
105-P-14	Bethlehem Copper Corporation Limited (165, 171); Conwest Exploration Company Limited (173); Dynasty Exploration Limited (174); Hudson Bay Exploration and Development Company Limited (170); Welcome North Mines Limited (166, 169, 176)
105-P-15	Welcome North Mines Limited (176)
105-P-16	Welcome North Mines Limited (161)
106-A-1	Bethlehem Copper Corporation Limited (178); Rio Tinto Canadian Exploration Limited (180)
106-A-3	Cominco Limited (167)
106-A-12	Welcome North Mines Limited (181)
106-B-1	Dynasty Exploration Limited (182)
106-B-8	Welcome North Mines Limited (181)
106-B-9	Welcome North Mines Limited (181)

INDEX

A Claim	107
Abitibi Paper	162, 165
AC Group	122
ACE Claim	28, 54
Acheron Mines Ltd.	124, 132, 133, 134, 136
Adams Sounds	37, 38
Ag	13, 15, 18, 19, 21, 22, 39, 55, 56, 57, 58, 69, 71, 75, 78, 79, 80, 81, 86, 87, 89, 90, 93, 93, 95, 103, 104, 106, 109, 112, 113, 116, 117, 125, 126, 166, 169
Agilis Engineering Ltd.	131, 136, 137, 154
AGPAN Claim	54
AJ Claim	169
ALL Claim	41
Allen Bay Formation	43
Allen River	43
Amax	125
Amax Exploration Inc.	159
Amax Northwest Mining Company Ltd.	9, 158, 159
Amax Potash	159
American Metal Climax Inc.	159
AMOW Claim	12
Angimayor Sound	8, 76
Anglo United Development Corporation Ltd.	81, 94
ANGUS Claim	23
ANT Claim	20
AO Claim	54
AP Group	89
APOLLO Claim	45
AQUARIUS Claim	45
Aquitaine Company of Canada Ltd.	9, 10, 28, 33
Arctic Bay Formation	35, 37, 38
ARN Claim	165
Arnica Dolomite	115
Arnica Formation	117, 171, 173, 174, 177, 178
Arrow Inter-America Corporation	157, 165, 166, 167, 172, 176, 178
Arseno Lake	96
ART Claim	23, 95, 173
Arvik Deposit	44
Arvik Mines Ltd.	8, 42, 50
Arvik Project	50
As	126
ASS Claim	4
Athapuscow Aulacogen	59
Atlas Exploration Company Ltd.	9, 128
Au	4, 13, 15, 17, 18, 19, 20, 21, 22, 55, 71, 72, 73, 74, 78, 79, 80, 81, 82, 83, 84, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 104, 106, 125, 126
AXE Claim	26, 148
Aylmer Lake	9, 71
B Claims	122
B-Zone Gold Deposits	20
Ba	146
BAC Claim	43
Bacon Anticline	44
BAIRN Claims	91

Baker Lake		27
Baltic		80
Bankeno Mines	41, 42,	50
Bannock Lake Showings	17,	18
BAR Claim		140
Baron's Oil Ltd.		96
BaSO		180
4		
Bathurst Inlet		9
Bathurst Island	45,	46
Bathurst Island and Grinnell Peninsula Project		45
Bathurst Norsemynes Ltd.		8
Bathurst Norsemynes Project		73
Bay Fiord Formation	41,	46
Bayou Petroleum		44
BC Claim	57,	122
BE Group		131
BEA Claim		153
BEAR Claim		167
Bear Rock Formation		120
BEARD Claim		45
BEL Claim		107
BELL Claim		57
Belmoral Mines Ltd.		
BEN Claim		78
Beniah Islands		78
Bethlehem Copper Corporation Ltd.	165, 171,	178
Bevco Mines Ltd.	57,	79
Bi		104
BIG JOHN Claim		55
Bissett Lake		26
Black Bear Lake		103
Black Giant Mines Ltd.		138
BM Claim		36
BOB Claim		23
Bobby Vein		74
Bonnet Plume Lake	169, 181,	182
BOOT Claim		23
BORDER Claim		158
Bourne Showing	117,	118
Bowell Islands		28
BP Minerals Ltd.		99
Brackett River		122
Bralorne Pioneer Mines Ltd.		112
BRAN Claim		41
Brislane Lake Property		68
Brown Lake		94
C Claims		12
CAL Claim		176
Cameron River	85, 86,	90
Camseil Bend		114
Camseil Thrust		118
CAN Claim	36,	156
Canada Tungsten Mining	4,	122
Canadian Dyno Mines Ltd.		74
Canadian Superior	9, 12,	43
Canex Aerial Exploration Ltd.		128
Canex Placer Ltd.	141,	153
Canex Placer Ltd.	126,	128
Cantung	4, 113,	124
Cantung Property		122
Cape Phillips Formation	41, 43, 51,	52

Captain Yellowknife Mines Ltd.	69
CAR Claim	23
Caribou Anticline	44
Carr Lake	12, 19
Carr Lake Project	12
CaSO ₄ , 2H ₂ O	180
CASS Claim	22
Cassiar	125
CAT Claim	154
CAT Claims	14, 23, 28, 76
CBB Claims	109
CC Claim	36, 70
CED Claim	122
Centre Anticline	44
Charlton Bay Formation	61
CHRIS Claim	23
Christopher Island Formation	27
CINQ Claim	139
Claymore Resources Ltd.	147
Clinton Colden Lake	8, 70, 71
CMC Claim	146
Co	104
Coal	121
Coal Licences 21-24	121
Columbian Northland Ltd.	25
Cominco Lake	154, 167
Cominco Ltd.	9, 42, 46, 50, 73, 83, 116, 117, 127, 146
Con Mine	4
Coniagas Mines Ltd.	15
Conjurer Bay	110
Consolation Lake	71
Consolidated Manitoba Mines Ltd.	74
Consolidated Mining and Smelting	91
Contwoyto Lake Beacon	55
Conwest	125, 173
Conwest Exploration Ltd.	8, 63, 66, 104
Coppercap Formation	162
Coppermine	4
COR Claim	47
Cordilleran	63
Cornwallis Island	41, 42, 43
Cornwallis Island Project	43
Coronation Geosyncline	98
Coronet Mines Ltd.	66
Corval Resources Ltd.	149
Cream Silver Mines Ltd.	124
Cruikshanks Lake	110
Cu	12, 13, 14, 15, 16, 18, 19, 22, 25, 29, 30, 31, 32, 33, 34, 35, 45, 55, 56, 57, 58, 59, 60, 62, 68, 69, 71, 73, 79, 86, 90, 91, 93, 94, 97, 102, 103, 104, 106, 113, 114, 115, 116, 124, 125, 128, 132, 139, 156, 158, 161, 163, 178
CU Group	62
Cullaton	20
CWT Claim	148
DAL Claim	135, 170
DALE Claim	68
Dasson Copper Corporation Ltd.	144
DAWN Group	69

D Claim	125
DEA Claim	152
DEB Claim	17
DE Claim	67
DEE Claim	18, 171
De Haven Anticline	44
DEL Claim	126
Delorme Formation	166, 176, 177
Delphi Resources Ltd.	86
Denison Mines Ltd.	15, 100, 105
Desperation Lake	71
Diane Vein	74
Diapros Ltd.	9
DICK Claim	169
DI Claim	139
DINGO Claim	96
Disappointment Bay Formation	52
Dis Lake	54
Discovery Lake	31, 32
Dismal Lakes	8
DOG Claim	23
Dome Lake	9, 87
Dome Mines Ltd.	90
DOP Claim	153
DOR Claim	181
DOT Claim	105
Douglas Peninsula	60, 61
Douglas Peninsula Formation	60
Drybones Bay	78
Dubawnt Group	25, 27
DUCK Claim	39
Duke Mining Ltd.	8, 103
Duncan R. Derry Ltd.	76
Dundas Islands	46
DWE Claim	20
DY-DEE Claim	110
Dynamic Group of Canada	26
Dynasty Explorations Ltd.	9, 155, 174, 182
East Arm	52
East Arm Supergroup	56
East Boundary Vein	74, 75
East Cleaver Zone	73
East Skin Boat Lake	111
Echo Bay Group	105, 107, 109
ECL Claim	84
ECLIPSE Claim	50
Eclipse Deposit	44
Ecstall Mining Ltd.	8, 97, 115
ED Claim	58
EF Claim	122
EKWI Claim	173, 178
El Paso Mining	9
EMILY Claim	164
Ennadai-Rankin Greenstone Belt	6, 9, 10, 11
Epworth Group	98
EREBUS Claim	45
Et-then Group	62
EVE Claim	17
FALL Claim	171
FARO Claim	95
FB Claim	117

Fe	66
FERN Claim	126
FES Claim	101
First Northern Explorations Ltd.	88
FISH Claim	39
Five Star Petroleum and Mines Ltd.	9
Flat Lake	124, 126
Flat River	122
Fort Smith	58
Fort Wrigley	116
Foxe Basin	32
Francois Lake	83
FRANK Claim	81
Franklin Mountains	116, 120
Freeport Canadian Exploration Company Limited	9, 18
Frobisher and Nova-Company Exploration Ltd.	125
FRY Claim	117
G Claim	122
G. Bruce and Associates	74
G Group	59
Gallery Formation	39
GAP Claim	147
GAP Group	60, 61
GAR Claim	50
Garry Bay	33
Gavin River	30
GEM Group	69
Geophoto Services	120
Geowest Services Ltd.	36
Getty Minerals Company Limited	101
Giant Yellowknife Mines Ltd.	9, 18, 30, 59, 60, 71, 117, 120
GILT Claim	20
GIN Claim	55
Glacier Lake	113
GLEN Claim	86
Global Arctic Islands Ltd.	34, 35, 36
GO Claim	35, 98
Godlin Lakes	9, 169, 171, 176, 178, 180, 181, 182
Gold	10
Gold-Uranium Exploration Ltd.	99
GONE Claim	57
GOOSE Claim	39
Gordon Lake	91, 93, 127, 128
Gossan	14, 29, 31, 38, 70, 71, 93, 95, 97, 108, 112, 153, 163, 175, 117
Grandora Explorations Ltd.	132
Great Bear Batholith	98
Great Plains Development Company of Canada Ltd.	9, 85, 94
Griffith Island	41
GRINCH Claim	45
Grizzly Bear Lake	113
GULL Claim	39
GUN Claim	155, 158
GUT Claim	158
H. Wist & Associates	88
Hackett River Area	8, 73
Hall Lake	33
Hansen Lake	101
Hardisty Lake	99

Hassard Creek		38
HAT Claims		124
Hawker Creek		38
HD Claim		103
HE Claim		16, 98
Headless Formation	117, 172, 173, 174, 177,	178
Hearne Channel		83
Hearne Lake		80, 81
HECLA Claim		45
Helika Lake		16
HEN Claim		23
Henik Lakes		10
Heninga Lakes		10, 23
Heninga-Carr-Kaminak Lakes		10
Hepburn Fold Belt		98
HEROUX-SURPRENANT Claims		16
Hewbet Mines Ltd.		20
HI Claim		14, 101
Hidden Bay		99
Hidden Lakes Mines Ltd.		88
Highland Mercury Mines Ltd.		135
HM Claims		88
HO Claims		98
HOB Claims		56
Hood River Project		97
HOPE Claims		12
Hope Bay Mines		8, 75
Hope Bay Syndicate		76
Hornby Channel		58
HORSESHOE Claims		162
Hottah Lake		8, 102
Howards Pass	9, 127, 131,	133
HUD Claims		23
Hudson Bay Exploration and Development Co. Ltd.		21, 170
Hudson's Bay Oil & Gas Company Ltd.		56
Hudsonian Orogeny		10
HUG Claims		125
Hurwitz Group		18, 23, 29
Husky Oil		17
HYL Claims		143
ICE Claims		107, 164
Ice Station Resources Ltd.		83
Ida Point Property		76
IDJUK Claims		45
Imikula Lake		25
Imperial Oil Ltd.		53
Indian Mountain Metal Mines		68
INK Claims		23
International Mines Services Ltd.		69
International Mogul Mines Ltd.		74
Irene Bay Formation	41, 43, 46, 51,	52
Iron Formation	8, 11, 21, 29, 32,	34
IT Claims		15
Itchen Lake		68
JA Claims		29
Jackpot Group		101
James River Mines Ltd.		74
JAN Claims		181
JAP Claims		81
JAY Claims		125

JE Claims	97
JET Claims	26
JIM Claims	181
JINGO Claim	96
JN Claims	99
JO Claims	36
JOE Claim	20
JON Claims	23
JOON Claims	82
JOY Claims	86
Juniper Mines Ltd.	134
K Claim	25, 26
K Group	25
Kahochella Formation	59, 61
Kahochella Peninsula	61
KAILA Claims	12
KAM Claims	23
Kaminak Group	11, 12, 14, 15, 18, 23
Kaminak Lake Area	19
Katherine Formation	178
Kazan Falls	26, 27
Kazan Formation	27
Kazan River	26, 27
KEG Claims	174
KEN Claims	26, 100, 157
Kenting Exploration Services Ltd.	37
Kermac Investments Inc.	47
Kimberlite Pipes	40
King Resources Company Ltd.	35, 36, 37
Kinga Lake	23
KIZAN Claim	54
KK Claims	66
KD Claims	101
Kognak River	20
Kogtok River	12
KR Claims	36
KRW Claims	85
Kuhulu Lake	39
L Claims	122
Lafferty Creek	101
LAN Claim	169
Landry Formation	71, 172, 173, 174, 177, 178
Laughland Lake	29
LAURINE Claims	26
LEAH Claims	107
LEE Claims	50
LEE Island	30
LEG Claims	23
LEN Claims	109
Lened Ridge	130
Lened Showing	128
LEO Group	125
LIN Claims	166
LION Claim	39
Little Cornwallis Island	40, 44, 47, 50, 52
LIZ Claims	26
Lizzie Creek	130
LN Group	54
LOGAN Creek	23
Lost Lake	15

LOU Claim	23, 116,	128
LOW Claim		53
Lower Rapitan Group		178
LP Claims		54
LS Claims		153
LUCK Claims		148
LYNN Claims		50
MAC Claims		26
MacMillan Pass	9, 158, 169,	182
Mactung Property		158
MAG Claims	30,	90
Maguse Lake	11,	12
Maguse Lake-Wallace River Project		10
Maguse River		11
Makao Development Company Ltd.		153
MAN Claim		180
Manalta Coal Ltd.		121
Manetoe Dolomite		115
Manetoe Formation	113,	114
MAR Claim		13
Marge Lake		17
Marion River Project		101
Marshall Peninsula	42,	50
Maroubra Holdings Ltd.		14
MARY Claim		50
Matthews Lake		72
Maverick Mountain Resources Ltd.	133,	137
McDonald Fault	52, 53,	56
McIntyre Porcupine		75
McLeod Bay Formation	61,	68
MEASIN Claims		101
MEG Claims		41
Melville Peninsula		33
Mercury Gold Mines Ltd.		96
MGB Claims		57
MIB Claims		50
MID Claim		23
Milchem Ltd.		8
Milne Island		50
Minas De Cerro Dorado Ltd.		145
MINE Claims		14
Mineral Resources International Ltd.		39
MJ Claim		104
Mo		111
Mont-Alta Projects Ltd.		13
Montgomery Lake Sediments		23
MOON Claim		125
Morso Island		13
MORSO ISLAND Claims		13
Mosher Lake		90
MSSL Claim		91
MTL Claims		71
Munro Lake	16,	17
Munro Lake Project		16
Murky Channel		59
Murky Formation		56
Murray Lake		91
MUSKOX Claims		42
Muskox Lake		71

Myrt Lake	90
N Claim	30
Nahanni Formation	115, 116, 117, 118, 120, 173, 177, 178
Natla Lake	155
Nemco Explorations Ltd	30, 31
New Continental Oil Company of Canada	26
New Park Mines Ltd.	66
Newcastle Explorations Ltd.	168
Newconex Canadian Exploration Ltd.	66
Newmont Mining Corporation of Canada	9, 113
Ni	13, 29, 30, 31, 32, 33
NIB Claims	86
NIC Claims	181
NIP Claims	128
NITE Claim	161
NO Claim	12
NOD Claims	151
Nonacho Group	52, 53, 54
Nonacho Lake	8, 55
NOR Claim	133, 134, 180
Nor-Can Minerals Ltd.	57, 62
Noranda Exploration Company Ltd.	22
Norex Resources	107
North Melville Peninsula Project	33
North Rankin Nickel Mines Ltd.	17
North Star Mines Ltd.	91, 92
North Valley Resources Ltd.	126
Northern Aerial Explorations Ltd.	109
Numac Oil & Gas	9
Nyarling Formation	67
O'Grady Lake	155, 156
OX Claim	147
P Claim	12, 74, 122
PAB Claims	124, 126
PAL Claims	147
PAM Claims	160
Pan Ocean Oils Ltd.	26
PAT Claim	20
PAUL Claim	12
Paula Lake	110
Pb	10, 19, 22, 34, 35, 36, 39, 41, 42, 43, 45, 46, 47, 50, 63, 66, 67, 69, 70, 85, 86, 91, 93, 106, 112, 113, 114, 115, 116, 117, 120, 124, 125, 126, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 143, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 158, 160, 162, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 180, 181, 182
PEG Claim	26
Pekantui Point	59
Pensive Lake	63
Penarroya Canada Ltee	115
Perry River	63
Perry River Nickel Mines Ltd.	29, 31
Perry River Syndicate	31
PESQ Claims	135
PETE Claims	23

Pethei Formation	59,	61
Pethei Group	60,	61
Petitot Islands		62
PIC Claim		26
Pine Point Formation		67
Pine Point Mines	4, 63,	67
Pistol Bay		23
Pitz Lake	26,	27
PK Claim		122
Placer Development Ltd.	4, 8,	141
Point Lake		68
POLARIS Claims	8,	51
Port Syndicate		109
Precambrian Mining Services Ltd.	74,	89
Prelude Lake		87
PRN Claims	29,	50
Prospect Street Syndicate		90
Prospecting Permit 17		17
Prospecting Permits 19, 20		51
Prospecting Permits 53, 54		44
Prospecting Permit 202		17
Prospecting Permits 208, 212, 213		27
Prospecting Permit 225		41
Prospecting Permits 253, 254		50
Prospecting Permit 256		42
Prospecting Permit 268		12
Prospecting Permit 269		12
Prospecting Permit 273 (Page 117), Permits 274, 275, 276, 278, 279		45
Prospecting Permits 282, 283, 284		101
Prospecting Permit 287		115
Prospecting Permit 288		157
Prospecting Permits 289, 290, 291, 292, 293		43
Prospecting Permits 294, 295		120
Prospecting Permit 296		98
Prospecting Permit 297		10
Prospecting Permit 298		10
Prospecting Permit 299		10
Prospecting Permit 300		10
Prospecting Permit 301		33
Prospecting Permit 302		22
Prospecting Permits 303, 304, 305, 306, 307		114
Prosper Mines Ltd.		92
Pyramid Mining Company		66
QUEST Claims		171
Quintana Minerals		9
Quoich River	28,	29
R Claims		122
R.M. Bentley & Associates		108
RA Claim		157
RAIN Claims		173
Rainy Lake		107
RAK Claims		166
Ramid International Ltd.		133
RAP Claims	94,	178
Rapitan Group		162

RAT Claim	26
RAVEN Claim	39
RED Claim	71
REEF Claim	176
REN Claim	141
Renton Management Ltd.	151
Republic Mining Ltd.	103
Rick Lake	94
RID Claim	50
RINO Claim	111
RIO Claim	125
Rio Alto Explorations Ltd.	31
Rio Tinto Canadian Exploration Ltd.	9, 180
RIS Claims	181
RITZ Claims	81
RL Claims	122
Robb River	106
Robb Lake	55
Roberts Bay	76
Roberts Bay Mining Company	76
Robinson Lake	53, 54
ROC Claims	66
Rockinghorse Lake	97
ROD Claims	149
ROOK Claims	41
Rookery Creek	42
ROS Claim	85
ROSS Claim	30
Ross Lake	106
Royex Mining Ltd.	20
RUM Claims	55
RUS Claims	76, 170
RUTH Claims	83
Ruth Gold Mines Ltd.	83
SAM Claims	94
Sam Lake	94
SAND Claim	155
SAP Claim	94
Savanna Creek Gas & Oil Ltd.	31
SCAT Claims	176
SE Claims	34
Seaforth Mines	8, 90, 102, 104
Seagull Island	121
Sekwi Formation	122, 161, 163, 164, 166, 170
Selco Exploration Company Ltd.	20
Selco Mining Corporation Ltd.	16
Selwyn Basin	112
Serem Ltd.	156
Shagory Lake	96
Shield Resources Ltd.	9
Sidewalk Group	74
Sidewalk Vein	74
Sik Sik Golden Copper Mines Ltd.	28
SIKSIK Claim	12
SINK Claim	23
Skarn	29, 111, 122, 125, 126, 130, 159
Slemon Lake	95
Smallwood Fault	105
Snare Group	106
SNOW Claim	173

Snowdrift	8
Snowdrift River	56
SOB Claim	26
Society Cliffs	38
Society Cliffs Formation	35, 36, 37, 39
SOLD Claim	69
Sombre Formation	170, 171, 172, 174, 177
Somerset Island	9
SON Claim	23, 150
Southwest Potash Corporation	159
Spi Lake	19
SR Group	95
St. Joe Minerals	52
Stanley Head Anticline	44
Stark Formation	59
STIB Claim	157
STOAT Claim	108
Strathcona Project	34, 35
Strathcona Sound	8, 9, 37, 38, 39
Strathcona Sound Deposit	39
Strathcona Sound Formation	37
Strutt Lake	95
Stuart Bay	42
STURQ Claim	23
Sturgex Mines Ltd.	20
Sulphur Point Formation	67
SUM Claim	138
Summit Lake	127
Sunblood Formation	176
Sutcliffe Lake	25
SYN Claim	92
TA Claim	98
TAG Claim	50
Takijuk Lake	8, 68
Takijuk Lake Project	97, 98
Taltheilei Formation	60
TAN Claim	67
TAP Claim	175
Taqiuk Lake	28
Tavane Explorations Ltd.	13, 14
Tavani	15
Taylor River	42
Taylor River Graben	43, 44
TC Group	63
TCL Exploration Group	125
TED Claims	76
TEE Claims	165
Templeton Bay	50
Terry Lake	84
Terra Mines Ltd.	8, 78, 107
Terra Peninsula	107
TERROR Claim	45
TET Claim	178
Texas Gulf Inc.	39
Thirty Mile Lake	26, 27
Thubun River	57
Thumb Mountain Formation	9, 41, 42, 43, 46, 51, 52
Tibbitt Lake	87

TIN Claims	86, 148
Titan Polaris Mines Ltd.	157
TM Claim	26, 86
TMT Project	26
TO Claim	145
Tochatwi Formation	59
TOM Claims	105
Tommie Lake	101
TONG Claim	81
Tornado Development Corporation Ltd.	134
Torwest Resources Ltd.	154
Toopon Lake	56
TOY Claim	128
TR Claim	36
Tremblay Sound	34, 38
Trigg, Woollett & Associates	35, 36, 37, 95, 114
Truro Island	46
TT Claim	86
TUKTO Claims	45
TUKTU Claims	12
Tumpline Lake	55
TUNDRA Claim	50
Tundra Mines	72
Tungsten	111
Tungsten Pass	9
Turquetil Batholith	11
TWIN Claim	50
TWIT Claims	167
Twitya River	167
Tyee Lake Resources Ltd.	157
U 25, 26, 27, 28, 52, 53, 54, 55, 99, 100, 101, 105,	106
Uhlman Lake	110
Union Island	62
Union Oil Company of Canada Ltd.	114
UN Sung Claim	45
Upper Ross Lake	85
U.R. Mines Ltd.	99
Utsingi Formation	60, 61
VAL Claim	79
VAN Claim	76
VAT Claim	50
VEN Claim	92
VENUS Claim	46
Vestor Explorations Ltd.	139, 148, 171
Victor Bay Formation	35, 36, 37, 38, 39
Victoria Fault	36
WAA Claim	11
WAB Claim	11
WAC Claim	11
WAD Claim	11
WAF Claim	11
WAL Claim	50
WALRUS Claim	42
Watts, Griffis & McQuat Ltd.	40
WAY Claim	33
WEA Claim	11
WEB Claim	23, 50
WEC Claim	11
WEL Claim	76

Welcome North Mines Ltd.	4, 9, 152, 160, 161, 162, 163, 164, 166, 167, 169, 171, 172, 173, 175, 176, 178, 181	
WENDY Claim		12
Western Standard Silver Mines Ltd.		140
Whale Cove		14
WHALE COVE Claims		13
Whiterock Lake		17
Whittaker Formation	166, 167, 168, 171, 172, 174, 176,	177
WIA Claim		11
Wildbread Bay	8, 55, 60,	61
Wildbread Formation		60
Wilson Bay		23
Wilson Island Group		59
Windflower Mines Ltd.		70
Winter Island		30
WO ₃	80, 122, 125, 126, 128, 130, 157, 158,	159
Ward River Graben		43
Y Claim	122,	141
Yandle Lake		23
Yandle-Kaminak Project		22
Yathkyed Lake		25
Yellowknife Supergroup	8, 72, 75, 78, 79, 80, 81, 82, 83, 86, 88, 90, 91, 92, 94, 95, 96	
Yukon Ranges Exploration Ltd.		125
ZAP Claim		26
ZEB Claim		102
ZIN Claim		125
Zn	12, 16, 18, 19, 22, 25, 34, 35, 36, 39, 41, 42, 43, 45, 46, 47, 63, 66, 67, 68, 70, 73, 84, 93, 94, 97, 106, 112, 113, 114, 115, 116, 117, 120, 124, 125, 126, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 158, 160, 162, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 180, 181, 182	
Zodiak Mining Ltd.		86



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3

1974

NORTHWEST TERRITORIES

by

W.A. Gibbins, J.B. Seaton, P.J. Laporte,
J.D. Murphy, E.J. Hurdle and W.A. Padgham

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CONTENTS

	Page
INTRODUCTION	1
SUMMARY OF MINERAL EXPLORATION	1
SUMMARY OF MINING	3
FEDERAL GOVERNMENT MINERAL ORIENTED ACTIVITIES IN 1974	3
PREPARATION AND FORMAT	5
KEEWATIN REGION	7
ENNADAI LAKE - RANKIN INLET AREA	7
Maguse Lake - Wallace River Project	7
Yandle - Kaminak Project	11
Munro Lake Project	14
AJ, DJ and JA*	16
LAMOON and TGOOD	17
Rochon Lake Project	17
B-Zone Gold Deposit	18
SKIM	19
BAKER LAKE - THELON RIVER AREA	21
TMT Project	21
Thelon Project	23
Baker Lake Project	24
CHANTREY INLET - WAGER BAY AREA	26
Hayes River Project	26
ARCTIC ISLANDS REGION	28
BAFFIN ISLAND	29
NAPATUK	29
Strathcona Sound Deposit	30
Hawker Creek Project	37
CORNWALLIS LEAD-ZINC DISTRICT	39
Astec Property	41
MEG Group, Griffith Island Project	42
Cornwallis Island Project	43
Cornwallis Island Project, Prospecting Permits 289-293	49
Dundas Island Project	50
Sheills Peninsula Project	51
HORNBY	51
Grinnell East Project	52
Grinnell Central Project	53
Truro Island Project	54
Little Cornwallis Island Project	55
MIL and LYN	58
Bathurst Island Project - Scoresby Properties	58
Grinnell West Project	59
ELLESMERE ISLAND - FRANKLIN MIOGEOSYNCLINE	60
Ellesmere Exploration Program	62
Prospecting Permits 313 and 314, LUMP	63
SOMERSET ISLAND KIMBERLITE DISTRICT	65
Kimberlite Project, Diapros Canada Ltd.	65
Kimberlite Project, Cominco Ltd.	69

*Names in full capital letters are claim names.

	Page
MACKENZIE REGION	70
CHURCHILL PROVINCE	70
TOM	72
LYN, PRN and JA	72
KIANLA	74
BM	75
BEN and MG	76
UR and EAGLE	77
BEV	77
BEAR PROVINCE	79
EAST ARM SUBPROVINCE	79
TAT	79
KEN	80
PEGGY K	81
BBX	82
THE GREAT BEAR BATHOLITH	84
ROSE	84
HONK	85
SUE and DIANNE	85
ART and LEE	86
FXO	87
HAM	88
JOE	89
GR	89
RT	90
PATCH	91
Camse11 River Silver District	92
ICE	94
NEAL and ZAP	94
MJ	95
AG	96
ITLDO	97
FR, LB and MARY	97
AMUNDSEN BASIN	98
Prospecting Permits 310, 311 and 312	99
Prospecting Permit 316	100
YUK	101
BRUCE, JEFF, MIKE and TIM	101
SLAVE PROVINCE	102
GOLD EXPLORATION IN THE SLAVE PROVINCE	103
Jax Lake Project	105
RAM	106
FIN	107
Bullmoose Lake Property	108
STORM	109
NC	109
AS, AU, CABIN ISLAND, EAGLE, FAB, GAB, KAY, POLE, RIBB and Y CYMRO	110
WT	111
AP	113
AUX	113
TT	114
RIBB	115
WHIZ-BANG	116
Cam1aren Mine	117

	Page
GY and JO	118
NOSE	119
CJ-IO Property	120
GOD	121
MAG	122
MOS	123
WOLF	124
SILVER DOG	125
VEN	126
Colomac Dyke Drilling Project	126
FN and RISS	128
MM	129
CORONATION GULF - JAMES RIVER AREA	130
Prospecting Permit 336	130
Prospecting Permit 337	133
Prospecting Permit 315	134
OP	135
Arcadia Property	135
BASE METALS EXPLORATION IN THE SLAVE PROVINCE	137
DALE and TIN	137
BAY	138
CO	139
CC and NOR	140
PER	141
RIV	141
A and B	142
ZAMBESI	144
SAM	145
NN	146
MA and TA	147
Prospecting Permit 296	148
Hackett - Back River Volcanic Belt	150
Ferric-Sanctuary-Contact Lakes Project	154
WES	155
DUCH	156
KIM	156
MEL	157
ELF	158
ART and CER	158
GO-JK: Yava Prospect	159
Bathurst Norsemines Ltd. Option	161
SA and ED	162
NEC	164
Prospecting Permits 328 and 329	165
PM	166
CAL	167
SASH and BEE	167
BILL	168
PAT	169
ANIE	170
INTERIOR PLAINS REGION - PINE POINT DISTRICT	170
Pine Point Exploration	171

	Page
NAHANNI DISTRICT	176
RINO	176
TICKER	178
Prairie Creek Property: ASH, LCM and WES	179
MA	179
SB	180
AB, CAB, DAB, EAB and BB	181
MAC	182
WRIGLEY DISTRICT	183
LOU	183
Prospecting Permits 304, 305 and 306	185
Wrigley Property	186
Prospecting Permits 294 and 295	187
HOWARDS PASS DISTRICT	188
PAS	190
Y	190
ALPHA, BRAVO, CHAR, DELTA and ECHO	191
CAC	192
NANCY	193
GUN and SAND	194
MACMILLAN PASS DISTRICT	195
KEN	195
ACHE, CAL and SHOOT	197
KEE	198
KEELE	198
ELI	199
NAT and TAN	200
DAR	201
GODLIN LAKES DISTRICT	201
HORSESHOE	202
EMILY and ICE	204
DA and OS	205
GLUG and TAP	206
ALF, ALFA, DAL, HUK and KEV	207
ART and EKWI	207
TEE	208
DICK, RAIN, RAK and REEF	209
BB	210
NITE	211
DAY and NOON	212
TET and RAP	213
BEAR and TWIT	214
BOB	216
GAYNA RIVER DISTRICT	216
JAN	217
CONE	220
DOR	221
RIS	221
JIM and NIC	222
ARC, KEN, MACK, RED, TAIN, TIC, TIL and ZIE	223
AJ	224
RT	224
AB, BB, CAB, DAB and EAB	225

	Page
PRODUCING MINES	227
Hope Bay Mine	227
Pine Point Mine Property	228
Con Mine: Con-Rycon Property	231
Giant Mine	233
Echo Bay Mine	234
Terra Mine	235
REFERENCES	240
NATIONAL TOPOGRAPHIC SYSTEM INDEX OF COMPANIES	251
INDEX	254

LIST OF FIGURES

Figure	Page
1 Location map showing District Geologists' Regions, operating mines, developing mines and promising developments in the Northwest Territories.	2
2 Geology of the Keewatin Region showing subdivisions (1) Ennadai Lake-Rankin Inlet Area; (2) Baker Lake-Thelon River Area and (3) Chantrey Inlet-Wager Bay Area.	8
3 Location of the Aquitaine Company of Canada Limited properties in the Maguse Lake-Wallace River Area.	10
4 Location of the Noranda Exploration Company Ltd. properties in the Yandle-Kaminak Lakes area.	12
5 Eastern portion of the Kaminak Volcanic Belt showing Noranda Exploration Company Ltd., Selco Mining Corporation and Sik Sik Golden Copper Mines claims.	15
6 Location of Pan Ocean Oil Limited properties in the Baker Lake area.	22
7 Metallgesellschaft Canada Limited prospecting permits west of Baker Lake.	25
8 Geological provinces of the Arctic Archipelago	28
9 Geology of the Arctic Bay-Strathcona Sound area.	32
10 Breccias in the Society Cliffs Formation dolomite.	34
11 Representative cross section of the Nanisivik ore body.	35
12 Pyrite stalagmites from the Nanisivik Property.	36
13 Distribution of the Thumb Mountain Formation and areas explored in the northern Cornwallis Fold Belt	44-45
14 Simplified geology of Ellesmere Island	61

Figure	Page
15 Geological sketch map of northwestern Judge Daly Promontory showing Great Plains Development Company of Canada Ltd. permits.	64
16A Location of Somerset Island kimberlites.	66
16B Map of the BATTY kimberlite.	6
17 Air photograph of the BATTY kimberlite.	67
18 Sketch map showing geological provinces in the Mackenzie Region.	71
19 Claims and mines in the Camsell River Silver District.	93
20 Geological sketch of the southern Slave Province showing gold properties and base metal properties worked in 1974.	104
21 Geological sketch map showing properties in the Coronation Gulf-James River Area, northern Slave Province.	131
22 Geological map of Hackett-Back Rivers Volcanic Belt showing properties worked in 1974 and other claims (as of January, 1977).	152-153
23 Geological sketch showing areas held under claims at Pine Point and the locations of drill holes submitted for assessment credit, Pine Point District, 1974.	172-173
24 Nahanni Region showing areas covered by larger scale location maps.	177
25 Prospecting permits and claim groups in the Wrigley area.	184
26 Geological sketch map showing properties worked in the Howards Pass area during 1974 and claims as of January 1977.	189
27 Properties in the Macmillan Pass District.	196
28 Properties in Godlin Lakes District.	203
29 Properties in the Gayna River District.	218-219
30 Plan of Pine Point Mines operations showing the various pits and ore bodies.	230
31 Geological map of the Tungsten-Flat River Area, N.W.T. showing claims worked in 1977.	238

LIST OF TABLES

Table	Page
I Comparison of claims staked and prospecting permits issued in 1973 and 1974.	1
II Production Summary for Operating Mines in the Northwest Territories, 1974	4
III Comparison of 1973 and 1974 Ore Reserves of Operating Mines in the Northwest Territories	4
IV Stratigraphic Sequence - Strathcona Sound, North Baffin Island	33
V Formations and Unconformities on Cornwallis Island, N.W.T.	40
VI Members of the Thumb Mountain Formation in the Vicinity of Cornwallis Island	41
VII Composite Stratigraphic Section, Central Franklin Miogeosyncline	62
VIII Grid Numbers and Locations, Texasgulf Prospecting Permit 296	146

INTRODUCTION

Mining and mineral exploration in the Northwest Territories (N.W.T.) in 1974 is described in this report. During the year, the mineral industry was monitored by district geologists in four regions, the Keewatin, Arctic Islands, Mackenzie and Nahanni as shown in Figure 1.

SUMMARY OF MINERAL EXPLORATION

Expenditures on mineral exploration in the Northwest Territories in 1974 are estimated at 18 million dollars, up 80% from 1973. Although fewer claims were staked in 1974 than 1973, more than twice as many new prospecting permits were issued, Table I.

TABLE I

COMPARISON OF CLAIMS STAKED AND PROSPECTING PERMITS ISSUED IN 1973 AND 1974

Mining District	Claims Staked		Region	Permits Issued	
				1973	1974
Arctic & Hudson Bay	4,836	1,218	Arctic Islands	5	2
Mackenzie	7,158	10,026	Bear & Slave Provinces	1	9
Nahanni	3,309	936	Cordillera	7	-
			Keewatin and		
			Melville Peninsula	6	28
	15,303	12,180		19	39

The number of claims maintained in good standing, the number of companies operating in the N.W.T. and the value of mineral production all increased in 1974. The high level of mineral exploration was due to: high prices for all production, relatively low and stable tax structure, availability of large areas with favourable geology and recent discoveries.

The most promising developments in the N.W.T. include:

discovery of a third high grade deposit, the 'Boot Lake Zone' on the Bathurst Norsemynes Ltd. property in the Hackett River Area by Cominco Ltd., drilling by the Yava Syndicate of a copper-lead-zinc body at H Lake, 25 miles southeast of the Bathurst Norsemynes deposits, discovery by Texasgulf Inc. of a small copper deposit east of Takijuk Lake,

discovery by Rio Tinto Canadian Exploration Ltd., Serem Ltd. and Welcome North Mines Ltd. of long mineralized units within Paleozoic formations (mainly the Sekwi Formation) north and east of Barrier Reef's Bonnet Plume discovery in the Yukon,

drilling by Gemex Minerals Ltd. of a copper-zinc showing at Heninga Lake in the Keewatin District.

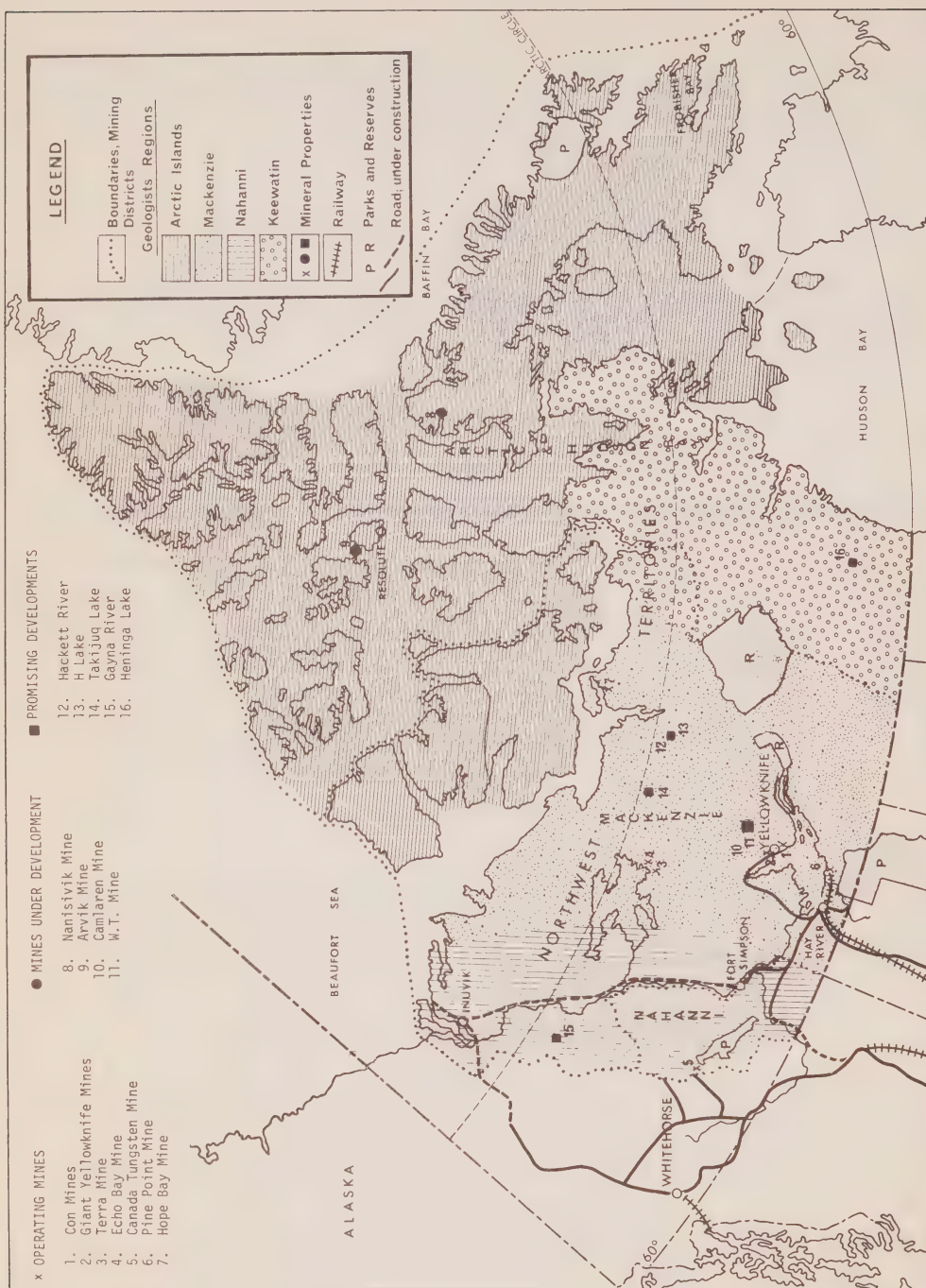


Figure 1. Location map showing District Geologists' Regions, operating mines, developing mines and promising developments in the Northwest Territories.

SUMMARY OF MINING

During 1974 seven mines operating in the N.W.T. produced minerals valued at \$223,000,000, up 40% from 1973. Lead and zinc from nine open pits and one underground operation at Pine Point Mines Ltd. produced 78% of this total. Production is given in Table II, reserves in Table III.

Yellowknife's gold mines, Giant Yellowknife Mines Ltd. and the Con-Rycon Mine, a Cominco subsidiary, increased ore reserves and expanded operations as a result of record high gold prices during the year. At Con, the Robertson shaft reached the 2500-foot level and at Giant Mines, an open pit was brought into production in August. At Tungsten, N.W.T., Canada Tungsten Ltd. began underground mining on the E Zone and improvement and expansion of the townsite, plant and mill at Tungsten.

Three silver mines operated in 1974. Terra Mining Ltd. produced silver and copper at their Camsell River mine and at Port Radium, Echo Bay Mines Ltd. produced ore from above the main haulage level. Hoisting and ventilation equipment from the Echo Bay mine was moved to the nearby Eldorado mine and dewatering of the shaft and workings commenced. In July and August, Hope Bay Mines Ltd. produced 65,000 ounces of silver from their Roberts Lake property on Melville Sound.

Nanisivik Mines Ltd. was formed to bring into production a lead-zinc deposit at Strathcona Sound on northern Baffin Island and began construction and underground development. Reserves are 7 million tons, averaging 14.1% zinc, 1.4% lead and 1.8 ounces of silver per ton.

At the Camlaren Gold Mine on Gordon Lake, Discovery Mines Ltd. deepened the shaft to 840 feet and drifted on the 800-foot level. Precambrian Shield Resources Ltd. drove 1000 feet of decline and drifts on the WT property at Myrt Lake. Drilling and sampling measured grade and tonnage in this gold deposit.

FEDERAL GOVERNMENT MINERAL ORIENTED ACTIVITIES IN 1974

During 1974, the staff of the Resident Geologist's Office of the Department of Indian Affairs and Northern Development at Yellowknife included the Resident Geologist, four District Geologists and a Project Geologist. Information was provided to various groups and individuals by organizing a Geoscience Forum; maintaining libraries of assessment reports, government geology reports, journals and university theses; presenting prospecting courses and geological talks; identifying rocks and mineral specimens; and answering other specific inquiries. A core library and storage facility was maintained in Yellowknife. Considerable office time and effort was spent evaluating property assessment reports and Northern Mineral Exploration Assistance Program submissions in accordance with the Canada Mining Regulations.

Field studies conducted by the Resident Geologist's Office included: mapping on the Hackett River (76 F/9, 16 and G/5, 12, 13) by W. Padgham and assistants; mapping at Rankin Inlet (55 J/13, 14 and K/9, 16) by Pierre J. Laporte and S. Leggett; and mapping of the Contwoyto Lake gold property of Canadian Nickel Ltd. (76 E/14) by Walter A. Gibbins and Douglas Bryan. A study of lead-zinc mineralization in the Sekwi Formation by W.J. Crawford, a lake sediment geochemical study of the Southern Slave Province by R.G. Jackson, and a study of the Upper Proterozoic Shaler Group of Banks and Victoria

TABLE II

PRODUCTION SUMMARY FOR OPERATING MINES IN THE NORTHWEST TERRITORIES, 1974

Company	Pine Point Mines Ltd.	Canada Tungsten Mining Corp.	Echo Bay Mines Ltd.	Terra Mining & Exploration Ltd.	Hope Bay Mines Ltd.	Giant Yellowknife Gold Mines	Con Mine (Cominco)
Type of Operation	Underground & Open Pit	Underground & Open Pit	Underground	Underground	Underground	Underground	Underground Open Pit
Location	South shore of Great Slave Lake	125 miles north of Watson Lake, Yukon	Great Bear Lake	10 miles south of Great Bear Lake	East of Bathurst Inlet	Yellowknife	Yellowknife
Mill Rate, Tons per Day	11,513	467	90 (Jan.--Aug.)	137	14 (Aug.--Sept.)	899	398
Grade	2.5% Pb 5.3% Zn	0.16% Cu 1.46% WO ₃	104 oz/T Ag 0.99% Cu	23.6 oz/T Ag 0.51% Cu	76 oz/T Ag	0.36 oz/T Au 0.07 oz/T Ag	0.58 oz/T Au
Total Tons Milled	4,135,380	170,614	20,768	45,684	843	328,099	145,205
Production	201,766,140 lbs Pb 410,968,220 lbs Zn	3,557,600 lbs WO ₃ 163,665 lbs Cu	2,159,137 oz Ag 408,797 lbs Cu	1,093,919 oz Ag 475,549 lbs Cu	64,244 oz Ag	101,514 oz Au 21,378 oz Ag	83,565 oz Au 19,919 oz Ag
Employees	587	104	73	53	20	326	217

TABLE III

COMPARISON OF 1973 AND 1974 ORE RESERVES OF OPERATING MINES IN THE NORTHWEST TERRITORIES

Company	Year	Pine Point Mines Ltd.	Canada Tungsten Mining Corp.	Terra Mining & Exploration Ltd.	Giant Yellowknife Gold Mines	Con Mine (Cominco)
Reserves (thousands of tons)	1974	39,500	4,436	69.6	2,400	1,600
	1973	38,300	4,242	80.7	1,173	1,200
Reserve Grade	1974	2.2% Pb 5.7% Zn	1.63% WO ₃ 0.23% Cu	42.4 K T. grade 27.2 K T. grade	55.1 oz/T Ag, 2.6 oz/T Ag, 3.1% Cu	0.61 oz/T Au
	1973	2.3% Pb 5.7% Zn	1.60% WO ₃ 0.22% Cu	49.5 K T. grade 31.2 K T. grade	43.9 oz/T Ag 2.8 oz/T Ag, 3.28% Cu	0.62 oz/T Au

Reserves for Echo Bay Mines Ltd. and Hope Bay Mines Ltd. are not known. K T.= thousands of tons

Islands by Charles W. Jefferson and Grant M. Young were done under contract with the Department. Maps and reports resulting from these studies are included in the *REFERENCES*.

Geological Survey of Canada operations in the N.W.T. are reported in Geological Survey of Canada Paper 75-1. Projects of particular interest to the mineral industry include: an integrated study of the Yava massive sulphide prospect at Agricola Lake; studies of Paleozoic rocks containing lead-zinc mineralization in the Northern Cordillera, in the Cornwallis Fold Belt, and in the Pine Point region; and several mapping projects in the Canadian Shield of the N.W.T. The latter included the discovery of massive sulphide mineralization at Point Lake and studies of the nickel potential of komatitic and other ultramafic rocks in the Prince Albert Groups of the Hayes River region.

As of January 1976, the Mining Recorders for all districts were stationed in Yellowknife, the Territorial Capital. Prospecting Permits will continue to be administered from Ottawa.

PREPARATION AND FORMAT

There are six chapters in this report. The first chapter is an introductory section, and the last comprises brief descriptions of activities at the seven mines which were in production in the N.W.T. during 1974. Separate chapters describe activities on properties within each of the four regions monitored by District Geologists (Fig. 1). Portions of regions in which several properties were explored have a location map and a description of common features to avoid needless repetition. Within the regions and areas, properties are listed in order of National Topographic System reference (NTS).

Most topographic features in the N.W.T. do not have names approved by the Geographic Board so that many of the names for features used in the report are not official.

Each property description gives data on ownership, leases, claims or permits involved and location. Most properties in the Canadian Shield are accessible to fixed wing aircraft or helicopter, as suitable lakes or treeless areas abound. Thus only more unique or unusual forms of access, such as by highway, are noted. In the Cordillera access is commonly by helicopter, and in the Arctic base camps are usually serviced by Twin Otter aircraft equipped with oversize tires and small crews and fly camps are moved by helicopter.

PROPERTY lists the permit, lease or claims by number or names. Tag numbers for claims have been omitted for most of the properties as this information is available from the Mining Recorder, or in the case of claims in good standing, from the appropriate claim maps.

REFERENCES given are to published material that is readily available in geological libraries. Reports submitted as assessment work are not listed in this report because they are available in the computer listings of the Canadian Index of Geoscience Data. These listings may be obtained alphabetically by title, by National Topographic System reference numbers (NTS) or by the concepts under which the report has been indexed. These listings are available for reference in the Library of the Resident Geologist's Office in Yellowknife.

Most of the assessment reports that have been submitted throughout the history of mineral exploration in the N.W.T. are held in the archives of the Resident Geologist's Office and are available for inspection. Photocopies and/or microfiche can be purchased if required, and in some cases original copies can be borrowed.

A summary of the *HISTORY* and a brief geological *DESCRIPTION* of the property is included. In some cases, reference is made to recently published Mineral Industry Reports for further historical details.

CURRENT WORK AND RESULTS are based on property visits by district geologists, company annual reports, press releases, and information volunteered by exploration geologists.

Wherever possible, property write-ups have been submitted to the companies or prospectors involved in the work. Changes relating to confidential information have been made as requested. Other suggested changes have been made where this would improve the write-up.

Properties in the Keewatin Region were described by Pierre J. Laporte, Keewatin District Geologist; those in the Arctic Islands Region by Walter A. Gibbins, Arctic Islands District Geologist; and those in the central Mackenzie District mainly by James B. Seaton, Mackenzie District Geologist. Properties in the Cordilleran Structural Province were described by James D. Murphy, Nahanni District Geologist in 1974, and have been revised by Chris Lord, present Nahanni District Geologist. Elizabeth Hurdle, Staff Geologist, prepared descriptions of active mines. W.A. Padgham, assisted by Walter A. Gibbins and Elizabeth Hurdle, edited and compiled the report.

Walter Gibbins acknowledges the cooperation and support of the Polar Continental Shelf Project, Department of Energy, Mines and Resources. The authors acknowledge with thanks the cooperation of the various companies and individuals concerned and regret any errors or omissions. The report was typed and the figures drafted by D.I.A.N.D. personnel in Yellowknife. Their dedicated assistance is gratefully acknowledged.

KEEWATIN REGION

In 1974 the District Geologist, Keewatin Region monitored mineral exploration in the District of Keewatin and on Melville Peninsula. This area, part of the Churchill Structural Province of the Canadian Shield, is underlain by Archean and Aphebian volcanic, sedimentary and plutonic rocks deformed and metamorphosed during the Hudsonian Orogeny. Shallow-dipping to flat-lying unmetamorphosed rocks of late Aphebian and Helikan age locally overlie the metamorphic complex south and west of Baker Lake.

In the following chapter the Keewatin District has been subdivided into three regions on the basis of geology and exploration targets (Fig. 2) the Ennadai Lake-Rankin Inlet Area, the Baker Lake-Thelon River Area, and the Chantrey Inlet-Wager Bay Area. Most of the properties in the district and on Melville Peninsula encompass, or are adjacent to lakes on which fixed-wing aircraft can land.

ENNADAI LAKE-RANKIN INLET AREA

The Ennadai Lake-Rankin Inlet Area is underlain by a complex of granitic gneisses, migmatites and intrusions enclosing northeast-trending belts of mafic to felsic volcanic flows and pyroclastics, slate, greywacke, conglomerate and minor iron-formation. These Archean volcanic and sedimentary rocks are unconformably overlain by Aphebian conglomerate, greywacke, quartzite and ortho-quartzite, argillite and dolomite which, to the east, are interbedded with and overlain by basaltic flows. During the Hudsonian Orogeny, the Aphebian strata and the Archean rocks along the axis of Aphebian sedimentation were folded about northeasterly axes and intruded by quartz monzonite and granodiorite. Fluorite-bearing granite intruded the Archean-Aphebian complex during Paleohelikian time.

Volcanogenic massive sulphide deposits within the Archean volcano-sedimentary assemblage are the main target of mineral exploration in this area. A gold deposit in Archean iron-formation at the southwest end of the main supra-crustal belt is under development.

MAGUSE LAKE-WALLACE RIVER PROJECT
Aquitaine Company of Canada Limited
2000, 540 Fifth Avenue S.W.
Calgary, Alberta

55 D/13, E, F/11-14, K/4; 65 H/1

REFERENCES

Davidson (1970b); Padgham *et al.* (1976); Ridler (1971, 1972, 1973); Wright (1967).

PROPERTY

The Maguse Lake-Wallace River project investigated six Prospecting Permits and 23 claim groups. These are listed and located on Figure 3.

LOCATION

The claim groups and prospecting permits cover part of the area extending from Ray and Carr Lakes east and northeast to Dawson Inlet (Fig. 3).

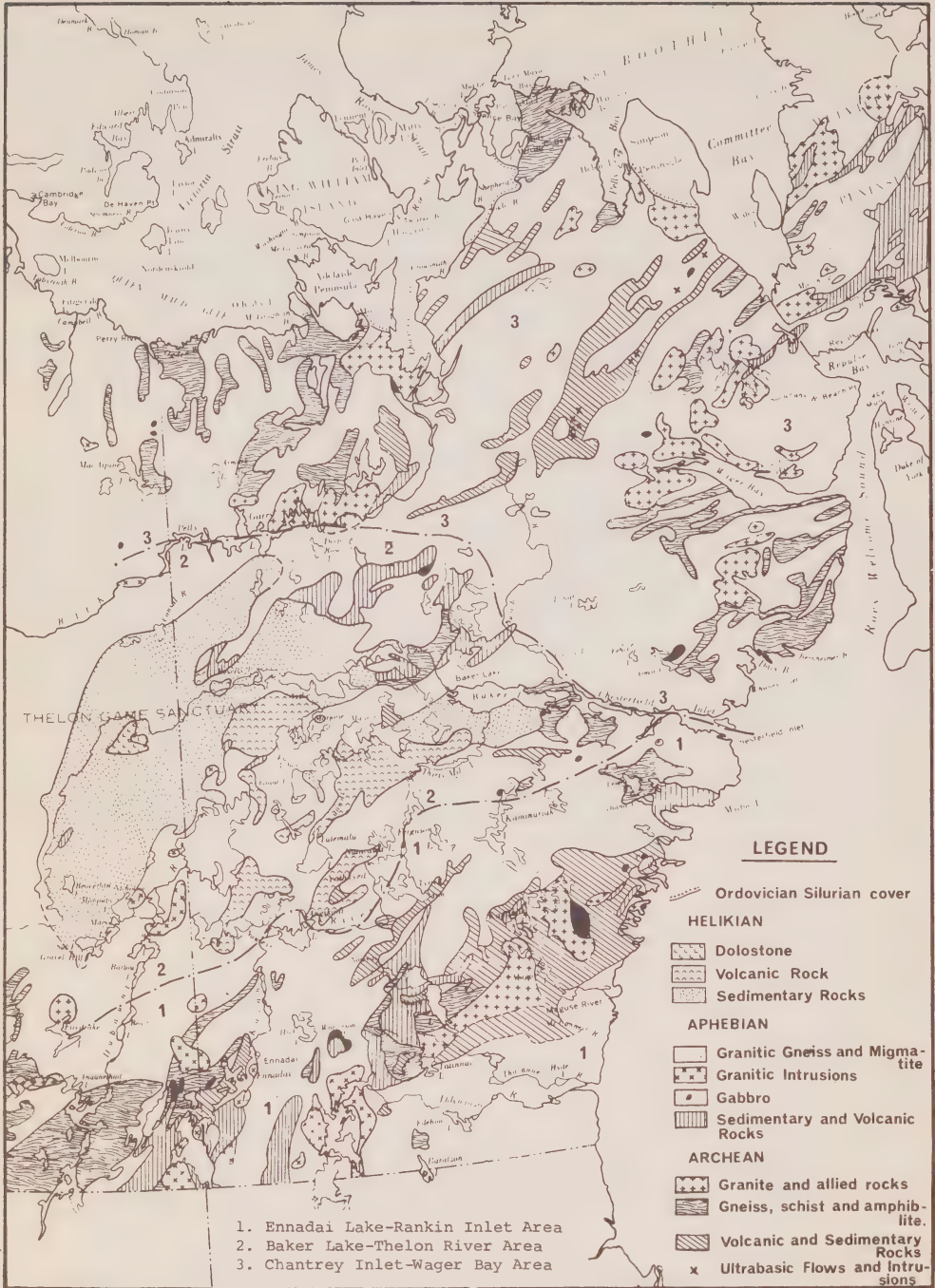


Figure 2. Geology of the Keewatin Region showing subdivisions (1) Ennadai Lake-Rankin Inlet Area; (2) Baker Lake-Thelon River Area; and (3) Chantrey Inlet-Wager Bay Area.

HISTORY

Prospecting permits 297-300 and 87 claims were acquired in 1973. Prospecting permits 308 and 309 were obtained in April 1974 and the WEM, WET, WEX, WEY, WEZ, HUB, CAMP, DRY, MAG, MIKE, SAND and SKI claims were staked that summer. The results of exploration on the property in 1973 are described in Padgham *et al.* (1976).

DESCRIPTION

The properties are in the southern part of the northeast end of the Rankin-Ennadai greenstone belt where metamorphosed volcanic and sedimentary rocks of the Kaminak Group are exposed. Large granitoid plutons intrude the greenstones to the west, north and southeast; smaller plutons lie to the northwest. The volcanic rocks are commonly pillowed and vary in composition from dacite to basalt with related gabbroic intrusions. Sedimentary rocks include quartzite and shale with numerous layers of magnetite iron-formation. Extensive drift cover lies west and southwest of the properties.

Ridler (1971, 1972, 1973) has subdivided the Kaminak Group into five volcanic cycles. The southwestern corner of Permit 299 (55 E/14), is underlain by the second oldest cycle, Ridler's units 3 and 4. These rocks are intruded in the west by the Turquetil Batholith and overlain in the east by the mafic basal member of the next cycle, Ridler's unit 5. The basal mafic volcanic member of the youngest cycle and the overlying predominantly sedimentary upper member of the cycle, Ridler's units 7 and 8, underlie Permit 300 (55 F/13).

CURRENT WORK AND RESULTS

EM and magnetometer surveys flown in 1974 include 199 line-miles in the east-central part of the property, 110 line-miles in the southeast corner of Permit 299 (55 E/14), and 2,370 line-miles in a southeast-trending block extending from the southeast corner of Permit 298 (55 E/10) to southwest of Permit 308 (55 E/3). Seven conductors were outlined within the two northern survey areas and 23 anomalies with high conductivity and/or short strike lengths were outlined in the southern block.

Vertical and horizontal-loop EM, magnetometer, and in a few cases IP surveys gave the results listed below.

GEOPHYSICAL RESULTS, MAGUSE LAKE - WALLACE RIVER PROJECT

Property	Zones Studied	Anomaly Priority			Property	Zones Studied	Anomaly Priority	
		High	Low	Others			High	Others
P.P. 297-300	34(6*)	11	13	4	WEB claims	2*		
P.P. 308-309	12	1	7	4	WEC claims	1		1
SAND claims	3	2	1		WAA claims	1	1	
SKI claims	1		1		WAC claims	1*		
CAMP claims	1	1			WAD claims	2*		
DRY claims	1		1		HUB claims	4	3	1
WEY claims	1		1		WEX claims	1	1	
WEZ claims	2	1	1		WEM claims	1	1	
WEA claims	1*							

* extension of previously surveyed grids

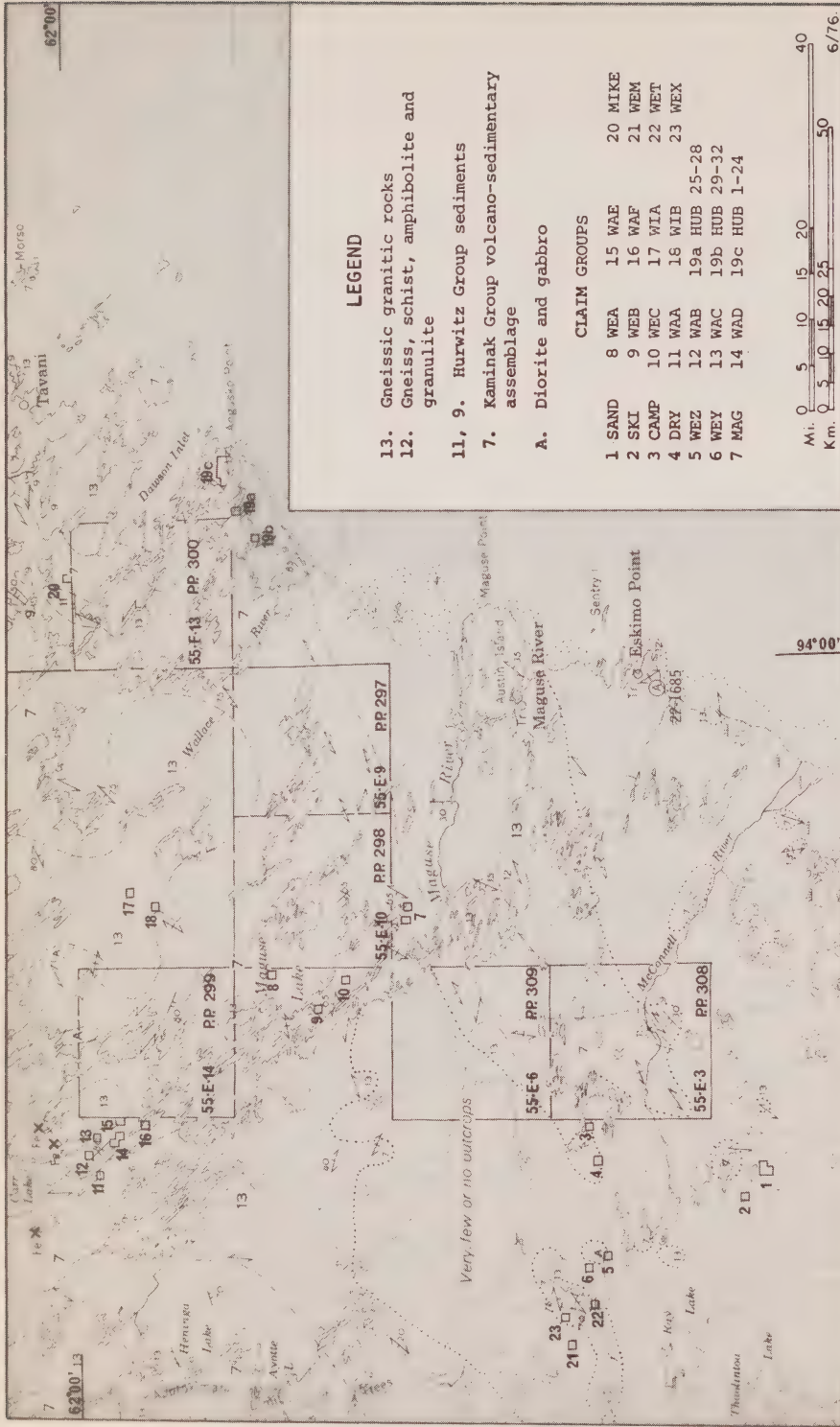


Figure 3. Location of the Aquitaine Company of Canada Limited properties in the Maguse Lake-Wallace River Area. (Geology from Wright 1967)

Nineteen drill holes, totaling 6,408 feet, tested 17 geophysical anomalies within a four-mile wide belt extending southeast from the WAA claims, south of Carr Lake to the WEA claims (Fig. 3). The conductors are thin layers of sediment, mainly interbedded graphitic argillites, chert and volcanic ash, between mafic flows or between mafic and felsic units. Pyrite, pyrrhotite and minor amounts of galena, chalcopyrite and sphalerite were intersected. The best assays reported are 3.88% Pb over 2 feet, 0.17% Cu over 2 feet and 0.9% Zn over 1.5 feet.

YANDLE-KAMINAK PROJECT
Noranda Exploration Company, Limited
Box 1619
Yellowknife, N.W.T.

Zinc, Copper, Silver, Uranium
55 E, K, L; 65 H

REFERENCES

Bell (1970, 1971); Davidson (1970a, 1970b); Heywood (1973); Ridler (1971, 1972, 1973).

PROPERTY

Noranda's Yandle-Kaminak project explored 35 claim blocks and a prospecting permit. Most of the claims are listed and shown on Figure 4; the WEB and CAT claims are shown on Figure 5.

LOCATION

The CAT claims are two miles north and the WEB claims are 2.5 miles north of Wilson Bay. The locations of Prospecting Permit 302 and of the other claim groups are shown in Figure 4.

HISTORY

Noranda Exploration Company, Limited obtained Prospecting Permit 302 in April 1973 and staked numerous claim groups that summer. The FOX, TOE, MIKE, JOE, AD, FRAN, GOOS and KEV claims were staked in 1974 and the following claims were allowed to lapse:

CASS 1-4; BOX 1-10; WEB 1-4; CAT 1-8; ANGUS 1-14; ART 2-5, 9-24, 27-28, 33-40; BOB 1-4; CAR 1-6; JON 1-6; KAM 1-80; BAY 22, 34, 42, 43, 49, 50; CHRIS 1-2; DOG 1; LOU 1-4; PETE 1-9; STURQ 5-15.

DESCRIPTION

Mafic to felsic volcanic rocks of the Kaminak Group and their metamorphosed equivalents underlie Prospecting Permit 302 (65 H/15). Hornblende diorite or leucogabbro and biotite adamellite intrude the metavolcanics in the northwest quarter and southeast corner of the permit area. The Montgomery Lake sediments and sedimentary members of the Hurwitz Group overlie the metavolcanics along the west shore of Kinga Lake and in the southern part of the area.

The claims groups cover mafic and felsic volcanic rocks of the Kaminak Group.

CURRENT WORK AND RESULTS

FOX, JO and TOE claims

Geological mapping showed the claims are underlain by fine to coarse felsic pyroclastic rocks and massive flows enclosing discontinuous carbonate-oxide iron-formation up to 300 feet thick and containing up to 20 per cent



Figure 4. Location of the Noranda Exploration Company Limited properties in the Yandie-Kaminak Lakes Area.

disseminated pyrite, pyrrhotite, chalcopyrite and sphalerite in the carbonate-rich zones. A 210-foot thick carbonate iron-formation on the island on claim FOX 47 was trenched and found to contain up to 0.28% copper and 1.54% Zn over five feet. Another showing and its on-strike extension on claims FOX 8 and 1 were also trenched. A nine-foot chip sample from the showing assayed 0.038% Cu and 2.0% Zn, while a grab sample contained 0.70 oz/ton Ag, 0.14% Cu, and 13.15% Zn.

ART 1, 6, 7, 25, 26, 27 claims

An horizontal-loop EM survey outlined two nearly parallel conductors; one 9000 feet long and the other 1600 feet long. Three strong single-line conductors were also detected.

MIKE claims

Felsic pyroclastic rocks underlying the MIKE claims are intruded to the south by granodiorite and to the southwest by alkali syenite. Fracture zones in the volcanic rocks are filled with calcite, biotite and uranium-thorium-bearing fluorite. The main showing was trenched and is a few inches to 10 feet wide, 1000 feet long and contains up to 0.067% U_3O_8 over 4 feet and 32.9% CaF_2 over 5 feet.

HEN claims

Horizontal shootback and vertical-loop EM surveys and a magnetometer survey outlined a 3200-foot long, moderate to weak conductor and three shorter conductors without appreciable depth extent.

INK claims

Horizontal shootback and vertical-loop EM surveys and magnetometer surveys outlined six conductors. Six holes, totaling 1790.7 feet, tested three of these conductors on claims INK 3, 8 and 9. Gabbro and 50- to 100-foot thick xenoliths of felsic pyroclastic rocks and flows containing massive to disseminated pyrite-pyrrhotite layers with quartz and minor chalcopyrite were intersected. Similar layers of sulphide with magnetite occur in zones of quartz-rich leucocratic hybrid gabbro. The best values reported are 0.21 oz/ton Ag, 1.73% Cu, and 0.04% Zn over 3.1 feet of a 30-foot thick zone of mineralized hybrid gabbro.

SINK claims

These claims cover two showings investigated by Canadian Nickel Company Limited in 1953 and originally staked as the STEW and BLACKJACK claims. In 1974, the showings were geologically and geophysically surveyed, trenched and drilled. The main showing is a 50- by 200-foot zone of pods and lenses, (up to 15 feet wide), of disseminated to massive sphalerite, pyrite, pyrrhotite and minor chalcopyrite in sericitized felsic tuffs enclosed within a gabbroic intrusion. A similar but smaller showing lies 800 feet to the north. Grab samples from the trenches assayed up to 0.85% Cu, 16.78% Zn and 0.97 oz/ton Ag. Three drill holes, totaling 910 feet, failed to intersect economic mineral concentrations in the down-dip and strike extensions of the showing. EM and magnetometer surveys outlined three shallow anomalies but geochemical tests of frost-boil material did not find high metal values.

BAY 5-10, 19,21, 23-24, 29-33, 35-38, 41, 44-48 claims

Horizontal shootback EM and magnetometer surveys outlined a 1,600-foot long conductor with a slight magnetic expression and two single-line anomalies.

BOOT claims

Horizontal shootback and vertical-loop EM surveys outlined two weak conductors that have no magnetic response.

HUD claims

Geological mapping found the claims underlain by felsic tuffs and grey-wacke. One outcrop of chloritized tuff contains disseminated pyrite, pyrrhotite, chalcopryite and magnetite.

LOGAN claims

Horizontal shootback and vertical-loop EM and magnetometer surveys outlined a weak 3,200-foot long conductor that has no magnetic response.

SON claims

The claims are underlain by medium to fine-grained felsic tuffs enclosing a narrow discontinuous andesitic tuff and two one- to two-foot thick layers of disseminated to semi-massive pyrite and pyrrhotite, containing minor chalcopryite and sphalerite. A grab sample of the sulphides assayed 0.13% Cu and 1.10% Zn.

STURQ claims

Geophysical surveys of the STURQ group outlined three weak conductors, two with weak magnetic correlation.

MUNRO LAKE PROJECT
Selco Mining Corporation Limited
55 Yonge Street
Toronto, Ontario

55 K/5; L/8
62°25'N, 93°50'W

REFERENCES

Davidson (1970a); Heywood (1973); Laporte (1974b); Padgham *et al.* (1976); Ridler (1971, 1972, 1973).

PROPERTY

A43607-21, 634-50; A81090-91; A81565-86;
A39901-14, 954-89; A43501-83; A43622-33;
A81006-09, 048-055
HE 1-296

LOCATION

The HE and 108 unnamed claims form a block covering Helika Lake and the north shore of Munro Lake. The remaining 102 unnamed claims lie in seven attached blocks: A43555-83, A43622-33, A81048-55, A43607-21, 34-50 and A81565-82, A81006-09 and A81583-86 to the west, north and east of the main block. All are shown on Figure 5.

HISTORY

Messrs. G. Heroux and L. Surprenant staked the A39901-14 and A39954-89 claims in the summer of 1972 on copper-bearing float discoveries north of Munro Lake. Selco Mining Corporation Limited optioned the claims and staked the HE claims in March 1973. The outlying blocks of claims were staked to cover anomalies outlined by a geophysical survey flown in May 1973. The option on the Heroux-Surprenant claims was dropped after the 1973 program

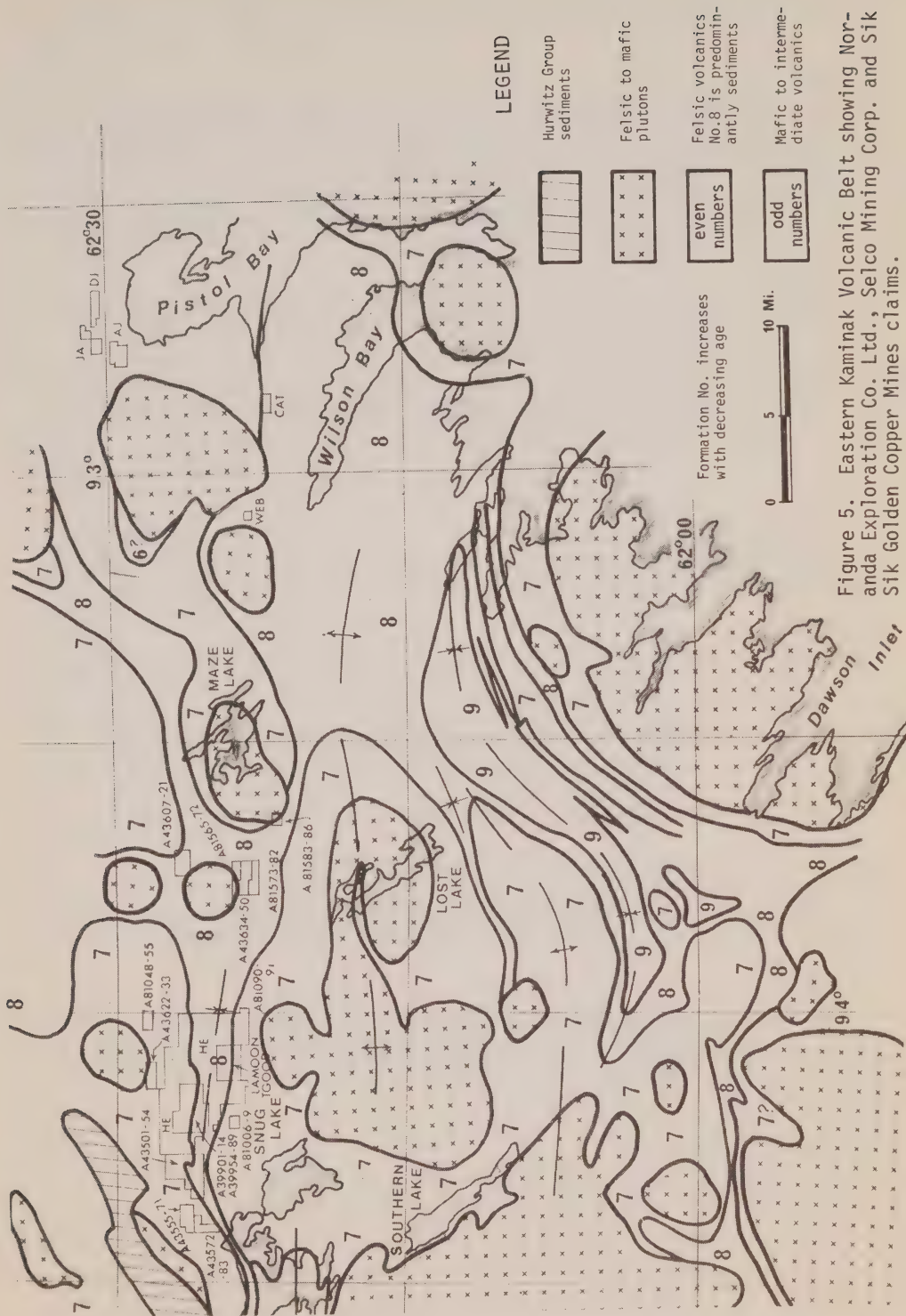


Figure 5. Eastern Kaminak Volcanic Belt showing Noranda Exploration Co. Ltd., Selco Mining Corp. and Sik Sik Golden Copper Mines claims.

(Padgham *et al.*, 1976) and HE 1, 5-8, 11-14, 16-36 and 64-296, A43501-83, A43607-21, A43622-33, A81006-09, A81048-55, and A81090-91 were allowed to lapse in 1974.

DESCRIPTION

The claim groups cover parts of a volcanic sequence consisting of massive and pillowed basaltic to andesitic greenstones (unit Am, Davidson, 1970a; unit 1, Heywood, 1973) enclosing a greywacke slate unit and felsic tuff, agglomerate and flow breccia (units As and Af). Gabbro has intruded the volcanic rocks northeast of Helika Lake and a plug of quartz diorite/granodiorite/monzonite has intruded farther east. The sedimentary and volcano-clastic units are correlated by Ridler (1973) with the upper part of the fourth volcanic cycle.

CURRENT WORK AND RESULTS

EM and magnetometer surveys on claims A43622-33 totaling 9.5 line miles outlined long narrow magnetic conductors. On claims A81048-55, similar surveys totaling 7.6 line miles outlined poor conductors at the contact between felsic and mafic volcanics. Three holes, a total of 879 feet of drilling, tested three conductors on A43634-50 encountering pyrite-pyrrhotite bearing graphitic shales in felsic pyroclastics.

AJ, DJ, JA claims
Sik Sik Golden Copper Mines Limited
253, 6715 Hunterview Drive N.W.
Calgary, Alberta

55 K/7
68°28'N, 92°45'W

REFERENCES

Heywood (1973); Laporte (1974b).

PROPERTY

AJ 1-18, DJ 1-14, JA 1-18

LOCATION

The claims are northwest of Pistol Bay on the west coast of Hudson Bay (Fig. 5).

HISTORY

Fifty claims were staked by L. Gingrish in October 1974 to cover ground previously held by Five Star Petroleum and Mines Limited (Laporte, 1974b).

DESCRIPTION

The area northwest of Pistol Bay is underlain by mafic volcanic rocks, intruded to the east and west by quartz diorite, granodiorite and quartz monzonite. Hurwitz Group, Kinga Formation orthoquartzite is in fault contact with the volcanics along the shore of Pistol Bay. These are units 1, 4, and 10 of Heywood (1973).

CURRENT WORK AND RESULTS

In September 1974 a 75 foot hole was drilled on AJ 12, three trenches were blasted on JA 16 and two trenches were blasted on DJ 3.

LAMOON AND TGOOD CLAIMS

D. Meunier	R.P. Mulliette
Box 1624	Box 1
South Porcupine	Roblin
Ontario	Ontario

Copper, Zinc, Silver
55 L/8
62°23'N, 94°05'W

REFERENCES

Davidson (1970a); Ridler (1971, 1972, 1973).

PROPERTY

LAMOON 1-16; TGOOD 1-19

LOCATION

The claims lie along the west and east shores and on the island in Helika Lake (Fig. 5).

HISTORY

The claims, staked by A. Bridges and D. Meunier in April 1973, may cover the source of sulphide-bearing boulders found on the south shore of the lake. Twenty three claims (A41201-13, 19-23, 29-30 and 33-35) were transferred to R.P. Mulliette in early 1974, the remaining twelve were optioned by Teck Mining Group Limited.

DESCRIPTION

Helika Lake is underlain by mafic and felsic volcanics of the Kaminak Group (units Am and Af, Davidson 1970a). Ridler (1973) places these rocks in the fourth volcanic cycle.

Mapping north and northwest of the claim group by Teck Mining Group Limited geologists indicate that the area is underlain by an east- to north-east-trending sequence of massive and pillowed mafic flows intruded by dykes and irregular bodies of feldspar and quartz-feldspar porphyries. The basic sequence is overlain conformably by a felsic sequence of lapilli to ash-size tuff with minor tuff breccia and rhyodacitic breccia. Diabase and gabbro dykes cut all other rock types.

CURRENT WORK AND RESULTS

Two men mapped the area and surveyed the land portion of the claim group with a Crone Radem VLF-EM unit. Three conductors were defined but two may be in overburden. A small sulphide gossan in the rhyodacite breccia contains uneconomic concentrations of copper, zinc and silver.

ROCHON LAKE PROJECT

Phelps Dodge Corporation of Canada Limited
1106, 55 Yonge Street
Toronto, Ontario

Copper, Zinc, Silver
65 C/13
60°48'N, 101°50'W

REFERENCES

Eade (1971)

PROPERTY

JIM 1-36, JOHN 1-36, ROY 1-16, UKE 1-23

LOCATION

The claim group covers the central part of Rochon Lake.

HISTORY

The JIM and JOHN claims were staked in late 1973 and transferred to Phelps Dodge Corporation of Canada Limited in early 1974. The ROY and UKE claims were added to the claim group in the summer of 1974.

DESCRIPTION

A slightly arcuate contact between granodiorite to quartz monzonite on the north and metavolcanic rocks with minor iron-formation (units 6 and 1 respectively, Eade 1971) trends east-northeast in the northern part of the claim group.

CURRENT WORK AND RESULTS

Twenty-six line-miles of vertical and horizontal-loop EM surveys and magnetometer surveys were done on the claim group and nine miles of EM survey on the south shore of Rochon Lake. Ten holes, totaling 2,389 feet, were drilled on the claims.

B-ZONE GOLD DEPOSIT	Gold
O'Brien Gold Mines Limited	65 G/1, 7, 8
916, 111 Richmond Street West	61°17'N, 98°31'W
Toronto, Ontario	

REFERENCES

Eade (1974); Padgham *et al.* (1976).

PROPERTY

PEN 3-35	65 G/1
AIR 1-12; GILT 1-15, 17-22, 25-29	65 G/7
DWE 1-13	65 G/8

LOCATION

The claim group extends across a major widening of the Kognak River between Cullaton and Mountain Lake.

HISTORY

The B-zone was discovered and drilled by Selco Exploration Company Limited in 1962 to 1964 and restaked as the GILT claims in 1972 (Padgham *et al.*, 1976). The PEN claims were added to the property in late 1973 to cover a showing on the south side of the river. The AIR 1-12 and DWE 4-13 were staked, contiguous to the GILT claims, in 1974.

DESCRIPTION

The claims cover a magnetite siderite chert iron-formation in greywackes and acid to intermediate pyroclastics. The iron-formation is found discontinuously along a strike length of 5,000 feet. The B-zone deposit occupies a 500-foot segment. The iron-formation is deformed, broken and recemented by quartz, calcite and sulphides. Gold occurs in the sulphides but not all sulphides carry gold. Drilling in the 1960's and in 1973 (Padgham *et al.*, 1976) outlined 185,000 tons grading 0.97 oz/ton.

CURRENT WORK AND RESULTS

Selco Exploration camps on Cullaton Lake and the Kognak River were refurbished and the airstrip at Cullaton Lake was extended to 4,800 feet and widened to 200 feet. A workshop was constructed near the airstrip.

SKIM CLAIMS
Gemex Minerals Incorporated
2106, 410 Bay Street,
Toronto, Ontario

Zinc, Copper, Silver
65 H/16
61°47'N, 96°13'W

REFERENCES

Bell (1971), Ridler (1973)

PROPERTY

SKIM 1-6, 9-14, 17-22, 24-29, 32-36

LOCATION

The claims cover the southeast end of Heninga Lake (Fig. 4).

HISTORY

The SKIM claims cover ground held as the TOWER 1-149 claims by Hudson Bay Mining and Smelting Company Limited from late 1946 till 1956. Fifteen holes, totaling 4,460 feet were drilled in August 1948. Giant Yellowknife Mines Limited mapped and prospected the south Heninga Lake area and trenched the showing in the early 1960's. T. Skimming prospected and staked the SKIM claims in July 1972. EM and magnetometer surveys outlined a 1,200 foot long conductor under the lake on strike to the west of the showing.

DESCRIPTION

The SKIM claims are underlain by interbedded felsic and mafic pyroclastic and flow rocks of the Kaminak Group (Bell, 1971); mafic flows or dykes, generally less than 80 feet thick, are interlayered with pyrite-bearing felsic agglomerates consisting of tightly-packed, deformed fragments in a feldspar-sericite-quartz matrix.

Drilling in 1948 outlined five 200 to 600 foot long southwest-trending sulphide zones dipping steeply to the southeast. Three types of sulphide concentrations were intersected: massive, banded pyrite-sphalerite lenses with minor chalcopyrite; massive, coarse-grained pyrite-sphalerite-chalcopyrite which may be crudely layered and contain gold; and irregular lenses and disseminations of pyrite, chalcopyrite and sphalerite parallel or subparallel to bedding. Assay results from the 1948 drilling are listed on page 20.

CURRENT WORK AND RESULTS

TURAM and cross-coil EM surveys over the land portion of the claims outlined a 2,000-foot long conductor enclosing the showings. Seven holes, 2,322 feet in all, were drilled and two sulphide bodies intersected. Assays and drill widths of intersections are given in the lower table on page 20.

RESULTS OF 1948 DRILLING SOUTH HENINGA LAKE

Zone No.	Hole No.	Location	Footage	Length (feet)	Au (oz/ton)	Ag	Cu (%)	Zn (%)
1	10	44+25W, 1+50S	85.0-110.0	25.0	tr	0.09	tr	1.39
	2	46+00W, 1+25.5S	130.8-140.0	9.2	0.02	1.54	0.22	8.2
	1	48+00W, 1+00S	32.5- 47.1	14.6	0.02	0.90	0.22	9.4
2	10	44+25W, 1+50S	244.0-253.7	9.7	tr	tr	0.69	tr
	9	44+25W, 0+10N	45.0- 64.0	19.0	0.01	0.37	0.33	tr
	2	46+00W, 1+25.5S	210.0-217.2	7.2	0.02	3.20	1.6	9.4
			240.0-250.0	10.0	0.01	0.49	0.17	tr
	3	46+00W, 0+45N	48.5- 65.8	17.3	0.01	0.16	0.59	tr
	1	48+00W, 1+00S	148.3-189.2	40.9	0.09	2.98	2.03	2.25
	12	48+00W, 1+20N	100.0-130.0	30.0	0.01	0.57	tr	4.1
	11	50+00W, 0+32S	118.5-155.0	36.5	tr	0.52	tr	3.56
	13	52+00W, 0+21S	55.0- 65.0	10.0	0.01	0.19	tr	2.6
3	3	46+00W, 0+45N	120.6-125.0	4.4	tr	0.03	0.67	tr
4	3	46+00W, 0+45N	260.0-280.0	20.0	0.01	0.18	tr	0.71
		with	275.0-280.0	5.0	0.45	0.28	tr	2.82
5	15	56+00W, 0+00	160.0-180.0	20.0	0.01	0.41	tr	0.36
			180.0-195.0	15.0	0.02	1.65	tr	tr
			195.0-215.0	20.0	0.01	0.31	tr	tr

RESULTS OF 1974 DRILLING SOUTH HENINGA LAKE

Zone No.	Hole No.	Location	Footage	Length (feet)	Au (oz/ton)	Ag	Cu (%)	Zn (%)
1	GMX3	13+00W, 0+50S	117-159	46	tr	0.15	0.35	0.15
	GMX1	14+00W, 0+50N	20-25	5	tr	0.68	0.20	3.94
	GMX2	14+00W, 0+50S	124-134	10	tr	0.72	0.21	0.18
			134-145	11	tr	0.21	0.06	3.45
	GMX4A	15+00W, 0+52S	84-92	8	Tr	0.50	0.10	4.48
2	GMX3	13+00W, 0+50S	239-252	13	tr	0.51	1.20	0.09
			252-264	12	tr	0.35	0.33	0.05
	GMX1	14+00W, 0+50N	137-171.5	34.5	0.03	3.09	2.91	6.84
	GMX2	14+00W, 0+50S	210-227.5	17.5	0.01	0.70	1.26	0.68
			243-253	10	0.02	3.81	1.66	4.34
			261-273.5	12.5	0.04	1.54	3.02	3.08
			192-208	16	0.01	0.63	0.15	8.88
	GMX4	15+00W, 0+50S	191.5-215	23.5	tr	0.87	0.20	2.01
	GMX4A	15+00W, 0+52S	215-243	28	tr	0.61	0.49	0.42
			243-253	10	tr	0.30	0.12	6.41
			253-366	13	tr	0.24	0.11	0.88
			266-283.5	17.5	0.01	4.03	2.75	7.36

BAKER LAKE-THELON RIVER AREA

The Baker Lake-Thelon River area is underlain by a complex of gneisses and gneissic to massive granitic intrusions enclosing small remnant Archean volcanic belts to the south and three belts of Aphebian metasediments, with minor volcanic flows, to the northwest. Late Aphebian to early Helikian shallow-dipping conglomerates and arkosic sandstone and mudstone intruded by syenite bodies and overlain by intermediate to felsic volcanic flows and pyroclastics cover the basement complex to the south and southwest of Baker Lake. Flat-lying quartzose conglomerates and sandstones of Paleohekikian age overlie the basement complex in the Thelon River area west of Baker Lake. Uranium in the basement complex and late Aphebian to early Helikian sediments is the main target of exploration in the area.

TMT PROJECT

Pan Ocean Oil Ltd.
1050 Three Calgary Place
355 Fourth Avenue S.W.
Calgary, Alberta

Uranium

55 M, 65 P
63°45'N, 96°W

REFERENCES

Donaldson (1965); Laporte (1974a, 1974b); Padgham *et al.* (1976); Wright (1967).

PROPERTY

Claims and prospecting permits explored by the TMT project are listed on Figure 6.

LOCATION

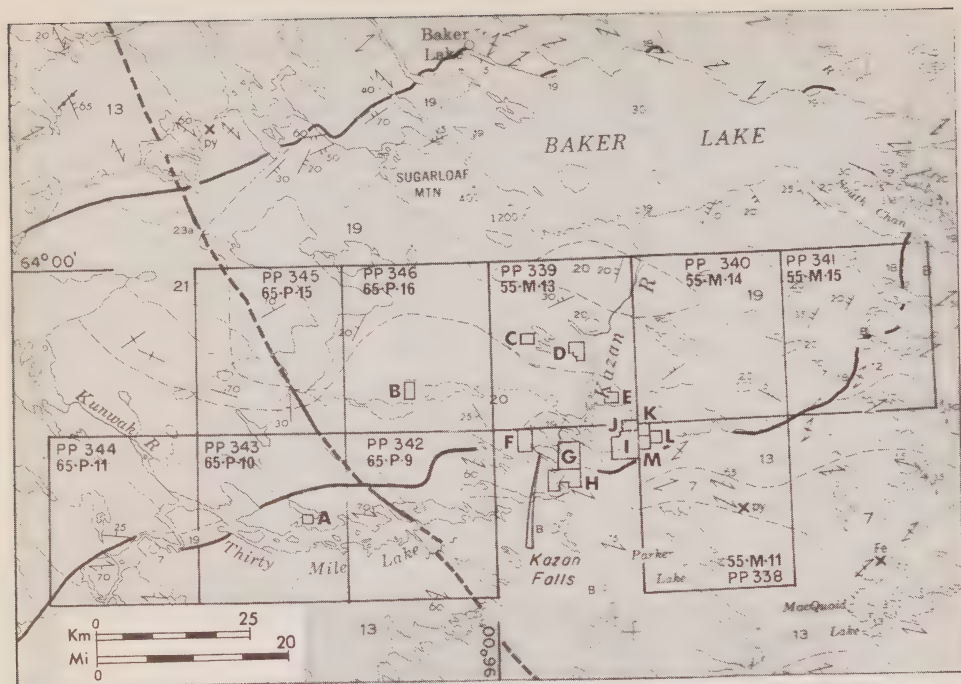
The prospecting permits and claim groups cover the area south of Baker Lake and extend from 97°30'W to 94°30'W (Fig. 6).

HISTORY

New Continental Oil Company of Canada Limited, taken over by Pan Ocean Oil Ltd. in 1971, acquired claims in the Baker Lake area in 1969 and have been actively exploring for uranium since then (Laporte 1974a, 1974b and Padgham *et al.*, 1976). The following claims were allowed to lapse following the 1974 field season: K 292-293, 310, 314, 349-354 and 360-362, KEN 20, RAT 19-20 and 22-23, SOB 2-4, and TM 101-102, 208-111, 113-115, 123-124, 132-137, 140-147, 153-156, 159, 182-185, 199-202, 217-222, 226-227, 236-237, 254, 260, 270 and 274-275. Prospecting Permits 338 to 346 were granted in 1974.

DESCRIPTION

The TMT project explored part of the southern edge of a basin of Dubawnt Group sedimentary and volcanic rocks which trends west-southwest from Baker Lake and overlie granitic gneisses. The area about Kazan Falls is underlain by arkosic sandstones of Kazan Formation and these are overlain to the north and west by intermediate to felsic flows of the Christopher Island Formation (Donaldson, 1965; Wright, 1967). Two uranium showings in the Kazan Falls area fill fractures in basement gneisses (Laporte, 1974a, 1974b).



LEGEND

- | | |
|-----------|--|
| Hadrynian | 23a Gabbro and diabasic gabbro |
| Helikian | Dubawnt Group |
| | 21 Conglomerate, pebble sandstone (Kazan Fm. / Thelon Fm.) |
| | 20 Porphyritic volcanic and intrusive igneous rocks (Christopher Island Fm. / Pitz Fm.) |
| | 19 Sandstone and pebbly sandstone (Kazan Fm. / Thelon Fm.) |
| | 18 Conglomerate (South Channel Fm.) |
| | — Sub-Dubawnt Group Unconformity |
| Aphebian | 13 Gneissic granitic rocks |
| | 12 Gneiss, schist, amphibolite and granulite |
| Archean | 7 Intermediate to basic volcanic rocks and derived amphibole schist and gneiss (may be Aphebian in part) |
| | B Diorite and gabbro |
| | C Anorthosite |

CLAIM GROUPS

- | | | |
|--------------------------------------|--------------------|----------------------|
| A. TM 101-02, 108-11, 113-15, 123-24 | F. TM 1-28 | I. TM 132-227 |
| B. K 363-94 | G. AXE, CAN, FIRE | J. K 350-62 |
| C. K 265-309 | JET, KEN, LAURINE, | K. BIS 1-20 |
| D. K 310-49 | LIZ, MAC, PEG, | L. TM 260-75 |
| E. K 231-64 | PIC, RAT, SOB, ZAP | M. TM 233-40, 251-55 |
| | H. TM 31-98 | |

Figure 6. Location of Pan Ocean Oil Limited properties in the Baker Lake area. (Geology from Wright 1967)

CURRENT WORK AND RESULTS

Airborne, combined gamma ray spectrometer and magnetometer surveys covering 12,436 line-miles at 1/8 mile line spacing and 2,466 line-miles at 1/4 mile line spacing, outlined 37 first priority and 92 second priority anomalies. Most are in 55 M/3, permit 339. An anomaly, just northeast of the K 231-264 claims, gave a total count reading of 13,570 CPS and a uranium reading of 577 CPS. This anomaly corresponds to a 300 foot by 100 foot outcrop of Kazan sandstone containing 0.15 to 0.2% U_3O_8 .

A geophysical method for identifying and outlining boulder trains in glacial overburden, the "Radiometric Till Survey" developed during 1974, uses a differentiating gamma ray spectrometer with a 21.2 cubic inch crystal mounted on an eight foot folding aluminum pole. Four-minute readings of total K_{40} , Bi_{214} , and Tl_{208} counts are taken at 25-foot intervals and the K_{40}/Tl_{208} and Tl_{208}/Bi_{214} ratios are plotted. Because uranium mineralization significantly increases the Bi_{214} and K_{40} readings but does not alter the Tl_{208} readings, the plots of the ratio values converge in areas of uranium concentration. This method is sensitive enough to detect a one cubic inch specimen of massive pitchblende placed 25 feet from the base of the probe. A total of 59,975 feet of surveying using this method was done on the claim groups during 1974.

THELON PROJECT
Shell Canada Limited
505 University Avenue
Toronto, Ontario

Uranium
65 O/5, 6, 11 to 14
63°40'N, 99°30'W

REFERENCE

Wright (1967)

PROPERTY

Prospecting permit 330	65 O/5
Prospecting permit 331	65 O/6
Prospecting permit 332	65 O/11
Prospecting permit 333	65 O/12
Prospecting permit 334	65 O/13
Prospecting permit 335	65 O/14

LOCATION

The 32-mile wide by 52-mile long project area, centered 80 miles southwest of Baker Lake, extends south from Wharton and Marjorie Lakes to within 12 miles of Tulemalu Lake.

HISTORY

Prospecting Permits 330 to 335 were acquired by Shell Canada Limited in 1974.

DESCRIPTION

The region is underlain by gneissic granite and granodiorite. At the centre of the project area, northwest-trending conglomerate and pebble sandstone of the Dubawnt Group Thelon Formation underlie a 32-mile long, 2- to 8-mile wide irregular area west of which lies a 2-mile wide, 8-mile long area of Pitz Formation porphyritic volcanics. The latter also underlie most of the southern half of Prospecting Permits 330 and 331. These are units 13, 21 and 20 respectively of Wright (1967).

CURRENT WORK AND RESULTS

Radiometric and magnetic surveys, totaling 12,925 line-miles flown on 1/8 mile line spacings, outlined 31 first priority and 48 second priority anomalies. Thirty-five of the airborne anomalies investigated by ground scintillometer and geological surveys are over boulder fields and outcrops of massive pink fluorite-bearing uraniferous granite rich in K-feldspar. Assays indicate the granite contains 20 to 28 ppm U₃O₈.

BAKER LAKE PROJECT
Metallgesellschaft Canada Limited
P.O. Box 56
Toronto Dominion Centre
Toronto, Ontario

Uranium
66 A, B, G

REFERENCES

Donaldson (1969); Laporte (1974a); Wright (1967).

PROPERTY

Prospecting permits 317 to 327 are located and identified in Figure 7.

LOCATION

Prospecting permits 317 to 327 cover a 15 to 45 mile wide area extending 90 miles northerly from Mallery and Princess Mary Lakes, northwest of Baker Lake (Fig. 7).

HISTORY

Areas 66 A/4 and 66 B/1 are the only two of the 11 areas taken under permit by Metallgesellschaft that had not been previously held and explored under permit, Laporte (1974a).

DESCRIPTION

Gneissic granitic rocks form the bedrock in the southern third of the project area. On the east they enclose Archean or Aphebian metavolcanics, metagreywackes and iron formation and Hurwitz Group quartzite. The area west of Schultz Lake is underlain by sandstone, pebbly sandstone and conglomerate of the Dubawnt Group. These are units 13, 7, 9, 19 and 21 respectively of Wright, 1967. Hurwitz Group quartzite and gneissic granite underlie the northern third of the project area.

CURRENT WORK AND RESULTS

During 1974, airborne scintillometer surveys, lake-water and lake-sediment geochemical surveys, geological mapping and prospecting outlined 23 radioactive showings. The airborne geophysical surveys included 3,500 line-miles of low-level grid flying and 4,000 line-miles of reconnaissance and follow-up surveys. For the geochemical survey 1,300 water and 1,200 sediment samples were analysed, an average density of one sample per 2.4 square miles.

Seven types of radioactive showings were discovered:

1. radioactive pegmatites in basement gneisses;
2. mineralized fractures, and sulphide-rich beds in the greenstone-metagreywacke assemblage;
3. thin layers in the basal sections of the Hurwitz Group quartzites;

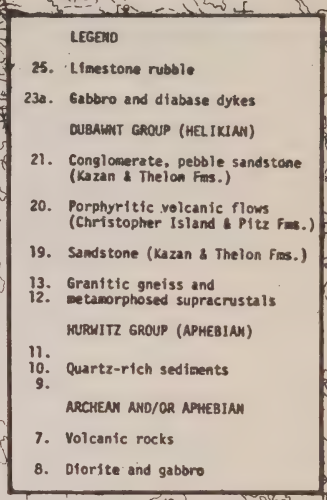


Figure 7. Metallgesellschaft Canada Limited Prospecting Permits west of Baker Lake. (Geology from Wright 1967)

4. thin layers in argillite and siltstone apparently overlying the quartzite;
5. radioactive zones in regolith below the basal conglomerate of the Dubawnt Group;
6. radioactive fluorite-bearing intrusive granites;
7. small irregular areas of red hematitic alteration in grey pebble sandstone of the Dubawnt Group.

The most interesting showing is a 600 by 100 foot area of glacial overburden. Sand collected from a frostboil contained 1.29% U₃O₈ and chips of sericitic greenstone coated with autunite assayed 0.34, 0.08 and 0.04% U₃O₈. A second showing lies 2,500 feet to the northeast along strike.

CHANTREY INLET-WAGER BAY AREA

A discontinuous belt of Archean volcanic and sedimentary rocks enclosing ultramafic flows and sills trends northeast across the central part of the Chantrey Inlet-Wager Bay Area. The belt lies in a granitic basement complex consisting of north- to east-trending belts of felsic to mafic gneisses within gneissic to massive granitic intrusions of Archean and Aphebian age. In 1974 the nickel-copper potential of the Archean sedimentary and volcanic rocks in the vicinity of the ultramafic bodies was studied.

HAYES RIVER PROJECT

Cominco Ltd.
1700-120 Adelaide Street West
Toronto, Ontario

56 J, K
65°45'N, 91°W

REFERENCES

Heywood (1961); Laporte (1974a, 1974b).

PROPERTY

None

LOCATION

This project was a geological study of the area north and east of the Hayes River to near Walker Lake.

HISTORY

King Resources Company (Laporte, 1974a) and Aquitaine Company of Canada Limited (Laporte 1974b) explored the area between 1969 and 1972. A two-man helicopter-supported crew prospected the Hayes River area for Cominco in 1970.

DESCRIPTION

The Hayes River area is underlain by a northeast-trending belt of greenstone, greenschist, hornblende schists, amphibolite and biotite gneiss with schist and gneiss derived from sedimentary rocks. This metasedimentary-metavolcanic belt is bordered to the north and south by mixed gneiss and granitic gneiss which also outcrop within the belt north and northwest of Laughland Lake and west of the Hayes River. The metavolcanic rocks include ultramafic flows, some of which show well-developed spinifex textures.

CURRENT WORK AND RESULTS

A small crew mapped and prospected the ultramafic bodies in 1974. Pyrite, pyrrhotite and minor chalcopyrite concentrations found in the meta-sedimentary, metavolcanic and ultramafic rocks have little economic potential.

ARCTIC ISLANDS REGION

In 1974 mineral exploration continued at a high level in the Cornwallis Lead-Zinc District. Cominco Limited and Canadian Superior Exploration Limited drilled, prospected and did gravity, geochemical, and reconnaissance and detailed geological surveys in the region. Ellesmere Island and the Strathcona Sound area of northern Baffin Island were also explored. Diapros Limited and Cominco Limited explored and sampled kimberlite pipes on Somerset Island.

Most significant was the decision to develop the Strathcona Sound deposit of Nanisivik Mines Limited.

The Arctic Archipelago is divisible into several major geological provinces, Figure 8. Precambrian rocks of the Northern Canadian Shield are exposed in the Minto Arch, Boothia Uplift, and Baffin Island and form a

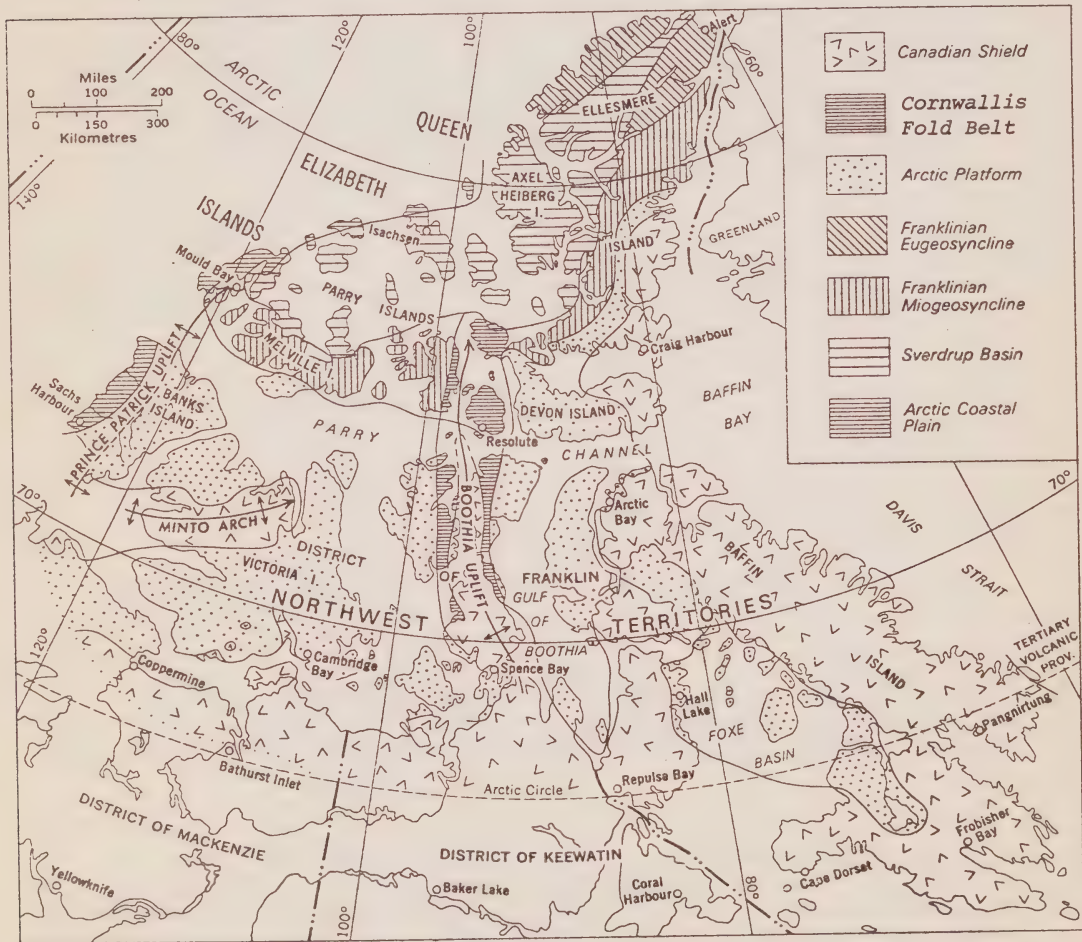


Figure 8. Geological Provinces of the Arctic Archipelago.

crystalline basement under much of the younger sedimentary cover. The north trending Cornwallis Fold Belt, which divides the Arctic Platform and Franklin Geosyncline into eastern and western parts, developed mainly in Silurian and Devonian time in response to periodic faulting caused by movements of the Boothia Uplift. The Sverdrup Basin, which in late Paleozoic and Mesozoic time was superimposed on the folded Franklin Geosyncline, was itself folded in the Cenozoic.

In addition to oil and gas and the lead-zinc and diamond exploration, iron, gypsum and coal have been reported at several Arctic localities.

Access to the Arctic Islands is available by regular jet service from the south to Resolute Bay, Frobisher Bay, Cambridge Bay or Inuvik. Most Arctic settlements have scheduled Twin Otter flights at least once a week, but camp-moves and re-supply flights for exploration crews are usually done by chartered Twin Otters equipped with oversize tires for landing directly on the Arctic tundra. These aircraft are available in Resolute Bay and Frobisher Bay.

BAFFIN ISLAND

Baffin Island is an extensive complex of Precambrian gneisses and granites locally overlain by flat lying unmetamorphosed Paleozoic and late Proterozoic sedimentary rocks. Proterozoic fold belts recognized on the Melville Peninsula reappear on the Island and some of these contain extensive iron formations similar to those on the peninsula.

In 1974 the Borden Peninsula, northern Baffin Island, was explored for lead-zinc deposits. In this area (Fig. 8), the basement complex was intensely metamorphosed during Aphebian time. A thick sequence of unmetamorphosed and almost undeformed basal volcanics and overlying sediments of Helikian age (Middle Proterozoic) were downfaulted into the gneisses of the basement complex. A thick Helikian dolomite, the Society Cliffs Formation, hosts massive sulphides. A profound unconformity separates Precambrian rocks from undeformed Lower Paleozoic sediments.

NAPATUK CLAIMS
Kimik Co-op,
Lake Harbour, N.W.T.

Lapis Lazuli
25 K/13
62°58'N, 69°43'W

REFERENCE

Davison (1958); Hogarth (1971).

PROPERTY

NAPATUK 1-5

LOCATION

NAPATUK 1-5 are on the North Sopher River, nine miles north of the settlement of Lake Harbour, southern Baffin Island.

HISTORY

This occurrence has been known to Inuit for several decades and is indicated on a published geological map (Davison 1958). A detailed description of the geology and mineralogy of the deposit is given by Hogarth (1971).

DESCRIPTION

The claims are underlain by highly metamorphosed rocks, including marble, biotite gneiss, schist and pyroxene granulites. The marble is mainly recrystallized dolomite and calcite, with some calc-silicate. Lapis lazuli is found in the marble in the core of tightly folded synforms. The rock is highly fractured and the colour of the lapis is not as attractive as deeper coloured specimens from Afghanistan, Siberia and Chile (Hogarth 1971).

CURRENT WORK AND RESULTS

In August 1974, the Department of Economic Development, Government of the N.W.T., sponsored 'X-ray' drilling of the deposit. Poor core recovery and water loss, due to the highly fractured rock and mechanical problems, forced abandonment after 25 feet of drilling.

STRATHCONA SOUND DEPOSIT
Nanisivik Mines Ltd.
Suite 100,
330 - 5th Avenue S.W.
Calgary, Alberta T2P 0L4

Zinc, Lead, Silver
48 C/1
73°02'N, 84°28'W

REFERENCES

Blackadar (1956, 1970); Blackadar *et al.* (1968b); Cabri (1973); Clayton (1966); Geldsetzer (1973a, 1973b); Lemon and Blackadar (1963); Trettin (1969).

PROPERTY

GULL 1-36 and WHALE 1-25, and mineral leases 2451, 2274, 2275, 2281, 2452, 2453.

LOCATION

The property is on the south shore of Strathcona Sound, a deep water fiord on the north end of Baffin Island. The deposit is immediately west of Kuhulu Lake and 17 miles east of the settlement of Arctic Bay, Figure 9.

HISTORY

A. English, a prospector with the Dominion Government Expedition (1910-1911) to the Arctic Islands under the direction of Captain J.E. Bernier, discovered a deposit of pyrite with minor sphalerite and galena on the south side of Strathcona Sound. J.F. Tibbet and F. McInnes, two prospectors, travelled from Churchill by dog team in 1937 and staked two claims on a pyrite showing near the western end of the Strathcona Sound deposit. They had very little time to work and their claims lapsed the following year.

In 1954 R.G. Blackadar and R.R.H. Lemon, of the Geological Survey of Canada, made a reconnaissance map of the area and visited some of the pyrite showings on the property (Blackadar, 1956). Having read Blackadar's report, geologists from Texas Gulf Sulfur (now Texasgulf Inc.) visited the area and staked several claims in 1957. Detailed geological and geophysical surveys and trenching tested the showings in 1958. Between 1961 and 1965 over 85,000 feet of drilling outlined the ore body and tested several showings. Geological surveys and 2,000 line feet of geophysical surveys were made between 1966 and 1967. In 1969 an adit and four cross-cuts were driven in the east end of the main orebody by J.S. Redpath Limited, a mine contractor and a 50 ton sample was taken for metallurgical testing in 1970.

In 1972 Mineral Resources International Ltd. obtained a long term option on the Strathcona Sound deposit whereby they would acquire a 65% interest in the property by bringing it into production. The firm of Watts, Griffiths and McQuat was engaged to prepare a feasibility study. The west end of the deposit was drilled and bulk sampled and the GULL claims were staked in late 1972. A feasibility study and additional geological, geophysical and geochemical surveys were completed and heavy equipment was delivered by sea-lift in 1973. A new company Nanisivik Mines Ltd., formed in 1974 to bring the deposit to production is owned 59.5% by Mineral Resources International, 18% by the Government of Canada, 11.25% by Metallgesellschaft Canada Ltd. and 11.25% by Biliton BV.

DESCRIPTION

The regional geology of the Strathcona Sound-Arctic Bay area has been discussed in several papers and is shown in Map 1237A, Arctic Bay-Cape Clarence (Blackadar *et al.* 1968b).

The stratigraphy and lithology of the area are given in Table IV. Preservation and present distribution of Proterozoic rocks are controlled by a major northwesterly trending 25 km wide graben system, that extends right across the Borden Peninsula. Within this system the Proterozoic sediments have been downdropped, folded and faulted into a series of smaller horsts and grabens and intruded by a distinctive gabbro dyke swarm, that trends parallel to the system. The sediments strike perpendicular to the graben system.

The Society Cliffs dolomite, which underlies most of the Nanisivik property and much of the graben, contains the orebody. It is usually a cliff forming unit and takes its name from the spectacular St. Georges Society Cliffs that form the north shore of Adams Sound from Arctic Bay to Admiralty Inlet. In the vicinity of the deposit, the Society Cliffs dolomite is typically a medium to dark brown laminated algal dolomite. Solution breccia, flat pebble conglomerate, vugs, petroliferous odor and stain, carbonaceous matter, and narrow recrystallized veinlets of carbonate are common (Fig. 10).

Many small horsts and grabens produce large vertical displacements of the stratigraphic sequence. The overlying Victor Bay Formation forms valley floors in grabens at a lower elevation than the Society Cliffs Formation or the underlying Arctic Bay Formation on adjacent hills (horsts). Easily eroded calcareous shales of the Arctic Bay and Victor Bay Formations can be mistaken for each other, complicating geological mapping.

Geldsetzer (1973a, 1973b) has shown that dolomitization, solution and collapse brecciation, karsting, mineralization and cementation of the breccias took place in a restricted time interval between deposition of the Society Cliffs and Victor Bay Formations. Furthermore, uplift and erosion, depth and degree of karsting, and brecciation, of the Society Cliffs Formation increase in a westerly direction. Field evidence supporting this interpretation includes:

- almost total brecciation of algal laminated Society Cliffs Formation in the west, decreasing in depth and amount to virtually none in the east
- the sharp facies change between the Society Cliffs dolomite and the black fine grained clastics of the basal Victor Bay Formation which have not filtered down into the breccia zones, and hence must have been cemented and mineralized before deposition of the clastics
- the Victor Bay Formation is not brecciated, not mineralized, and incompletely dolomitized

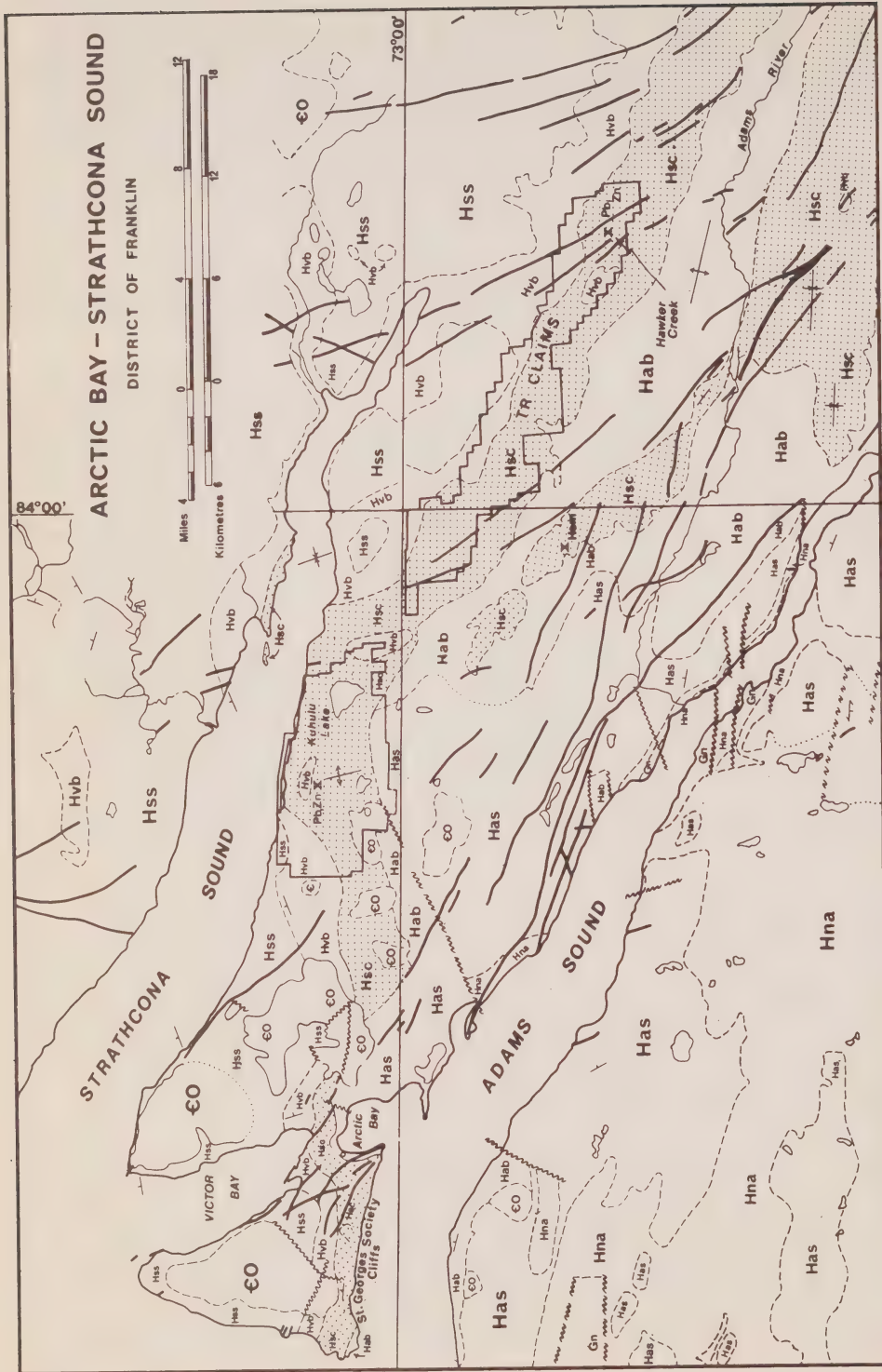


Figure 9. Geology of the Arctic Bay-Strathcona Sound area. Geology from Blackadar et al. (1968a to d).

TABLE IV
STRATIGRAPHIC SEQUENCE - STRATHCONA SOUND, NORTH BAFFIN ISLAND
(after Lemon and Blackadar, 1963)

Period	Group	Symbol (Fig. 9)	Formation	Thickness (Feet)	Lithology	
Quaternary					Silts, gravels, clays	
PALEOZOIC Cambrian- Ordovician	ADMIRALTY GROUP +2580		Unconformity			
			Baillarge	+460	Limestone, fossiliferous	
			Ship Point	920	Flaggy dolomite, fossiliferous	
		€0	Turner Cliffs	±350	Sandstone, siltstone, mudstone, shale	
			Gallery	±600	Sandstone	
			Angular unconformity			
			Hg		Gabbro dykes	
			Intrusive contact			
	PROTEROZOIC Helikian	ULUKSAN GROUP 6850	Hel	Elwin	+2500	Sandstone, siltstone, shale
			Hss	Strathcona Sound	±2500	Mudstone, siltstone
Hvb			Victor Bay	+600	Dolomite, minor limestone, mudstone, edgewise conglomerate	
Hsc			Society Cliffs	+900	Dolomite, solution breccia and conglomerate, algal laminae	
Hab			Arctic Bay	+350	Calcareous shale	
EQALULIK GROUP 5500			Disconformity			
		Has	Adams Sound	+4000	Quartzite, minor shale, conglomerate	
		Hna	Nauyat	±1000	Andesite and basalt flows, tuffs	
			Lower Quartzite	±50	Quartzite	
Hudsonian				Angular unconformity		
	Gn				Biotite gneiss, granitoid gneiss	

In addition to the geological conditions above, economic conditions, such as transportation to the coast and Nanisivik mill, make the western end of the graben the most favourable area for locating more ore.

The sulphide ore body is flat-lying and follows an easterly trend over a strike length of 10,000 feet forming an open S-shape not unlike a gentle river meander. Cross sections perpendicular to the main trend show the sulphide zone as a horizontal lens 200-400 feet wide and up to 60 feet thick in the centre (Fig. 11). An envelope of massive pyrite commonly separates the lead-zinc ore from the barren dolomite. Sulphides are rarely found above this horizontal lens, but deeper drilling commonly intersects a vertical "keel" of pyrite. Smaller horizontal "wings" also occur and may contain lead-zinc mineralization. The keel has been interpreted as a "root" or "feeder" vein and also as a karst cave channel. Evidence supporting the latter is found in a section of the pyrite keel that is exposed in a valley wall just south of the west end of the main ore deposit, where pyrite staghites have been found (Fig. 12).

The Watts, Griffis and McQuat Limited feasibility report concluded that the main orebody at Strathcona Sound contains reserves of 6,970,000 tons averaging 14.1% Zn, 1.4% Pb and 1.8 oz. Ag per ton, taking a cutoff grade equivalent to 7% zinc (Mineral Resources International Annual Report 1974).

A Irregular sparry dolomite veining



B Flat pebble conglomerate



C Chaotic solution breccia



Figure 10. Breccias in the Society Cliffs Formation dolomite.

A mineralogical investigation of samples from the deposit (Cabri 1973), shows that the ore is mineralogically simple and coarse grained. This study and extensive metallurgical tests carried out by Texasgulf Inc. and Lakefield Research indicate that high grade zinc and lead concentrates can be produced without difficulty.

Sphalerite and galena are the important ore minerals; pyrite is the major gangue mineral. Minor amounts of dolomite and calcite and traces of quartz, pyrrhotite and chalcoppyrite are present in the ore zone. Sphalerite is generally coarse grained and varies in colour from light buff to dark brown, mostly due to an iron content varying from 0.25 to 7.5 weight per cent. Cadmium and silver content are also variable and are associated with sphalerite. Much of the ore zone shows a roughly horizontal 1/2 to 2 cm thick sphalerite layers alternating with sparry carbonate and/or pyrite layers. Most of the sulphide-dolomite contacts are very sharp and well defined. Solution and collapse breccias seem to be less common in the immediate vicinity of the ore.

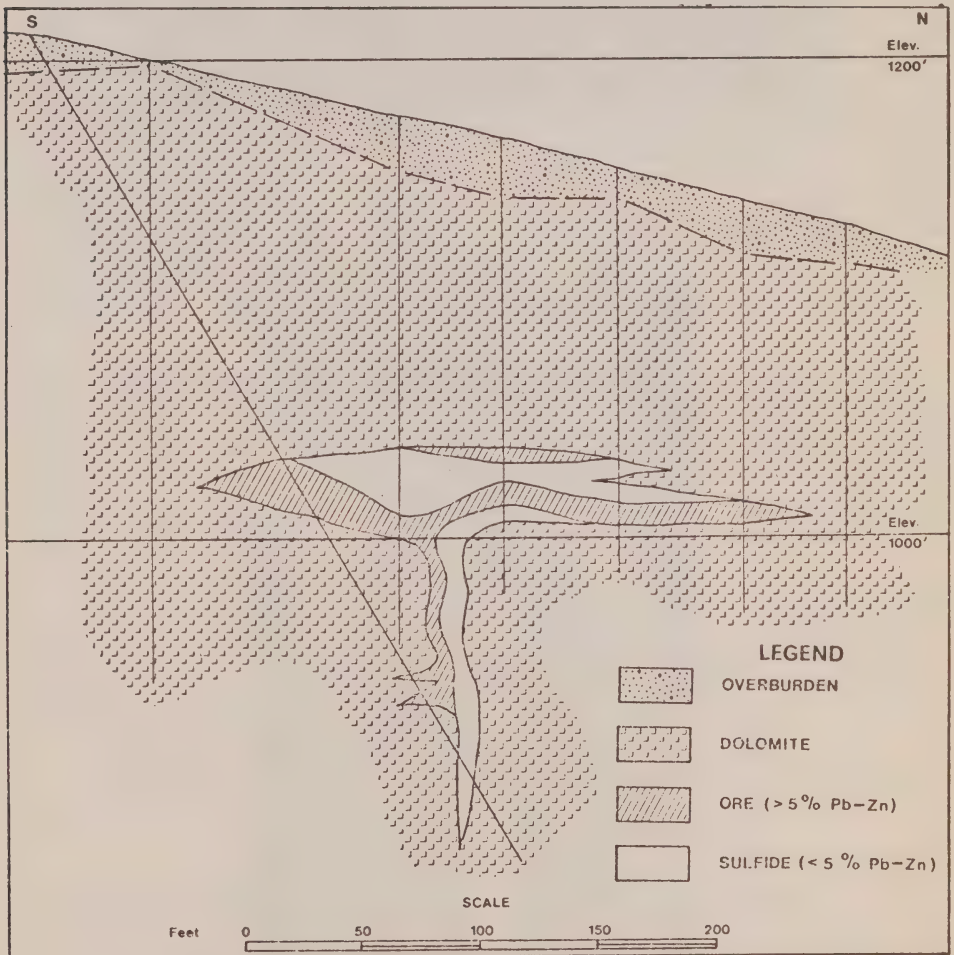


Figure 11. Representative cross section of the Nanisivik ore body.

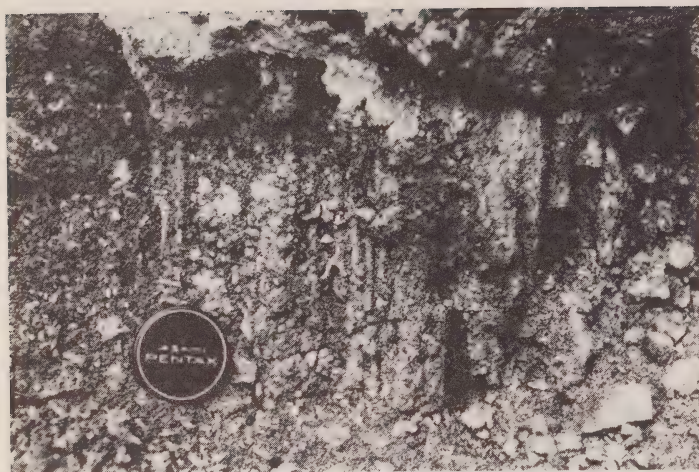


Figure 12. Pyrite stalagmites from the Nanisivik Property.

The main ore body has been recognized and followed by an HF vertical loop EM survey using a 600 foot spread. Horizontal loop EM and magnetometer surveys gave little or no information (Clayton, 1966). VLF EM-16 surveys also picked up an anomaly caused by the main ore body and located several additional anomalies.

CURRENT WORK AND RESULTS

Early in 1974 a new firm, Strathcona Mineral Services Limited was formed to manage the project.

In June 1974 an agreement was announced whereby the federal government was to invest \$16.7 million for an 18% equity interest in Nanisivik Mines, a new company formed to develop the Strathcona Sound deposit. Under the terms of the agreement: the government investment of \$16.7 million will be used for airport and dock facilities, road construction and townsite infrastructure; production will be paced so that the known reserves are mined over a period of at least 12 years; Nanisivik Mines Limited is committed to spend at least \$250,000 a year on exploration in the area for 10 years once it is in production; an effort will be made to employ northern residents for at least 60% of its work force within three years of the start of production; Metallgesellschaft and Billiton will provide debt capital and guarantee cost overruns for the mine in return for 80% of the concentrate and an equity of 11.25% each; Mineral Resources International will retain a controlling 59.5% equity in Nanisivik Mines Limited. An additional agreement has been made with Texasgulf Inc. for additional cost overrun commitments in return for a long term sales agreement covering the remaining 20% of the concentrates (Toronto Globe and Mail, February 28, 1975). The leases have been conditionally transferred to Nanisivik Mines Limited from Texasgulf Inc. and their wholly owned subsidiary Kuhulu Creek Mining Co. Limited.

Between August 1974 and March 1975, two new adits and a connecting ramp were excavated in the western end of the main ore body by J.S. Redpath Limited. The upper level is the mining horizon and follows the top of the ore zone; the lower adit is the main service drift to the future crushing, screening and storage facilities. Mine development has been halted pending completion of these facilities expected later in 1975. Camp, housing, road, and dock construction are under way and production is expected to begin in 1976.

A geological survey during the summers of 1973 and 1974 showed the GULL claims underlain by shales of the Victor Bay Formation. The favourable Society Cliffs dolomite is believed to lie at a depth of 400 to 500 feet in this area. A VLF EM survey covered these claims in 1974 but significant anomalies were not detected, possibly because the Society Cliffs dolomite is deeper than the instrument's detection limit.

The 24 WHALE claims were staked on the east end of the property in 1974.

HAWKER CREEK PROJECT
Global Arctic Island Ltd.
Suite 1506,
500 Fourth Avenue, S.W.
Calgary, Alberta
T2P 2V5

Zinc, Lead
48 A/13
72°53'N, 83°31'W

REFERENCES

Blackadar *et al.* (1968a); Laporte (1974a); Padgham *et al.* (1976).

PROPERTY

TR 1-332

LOCATION

Hawker Creek is 40 miles northwest of Magda Lake and 23 miles southeast of the Strathcona Sound lead-zinc deposit or two miles south-southeast of the east end of Strathcona Sound. The occurrences at Hawker Creek extend over an area 1400 by 9200 feet along the west side of the lower creek (Fig. 9).

HISTORY

The claims lie within the area covered by Prospecting Permit 88 issued to King Resources Ltd. in 1969. Their Strathcona Project, conducted by Kenting Exploration Services Ltd. in 1969 and by Trigg, Woollett and Associates Ltd. in 1970, is described by Laporte (1974a). The project was taken over by Global Arctic Islands Ltd. in 1972 and 1973 (Padgham *et al.*, 1976). TR 1-332 is one of several groups staked when the permits lapsed in 1972.

The first definite indication of mineralization along Hawker Creek was anomalous lead and zinc values in silt samples. S. Hawker discovered several mineral occurrences including SH 25 in August 1970. Although EM anomalies were not recorded by an airborne reconnaissance survey, six weak crossovers were detected by a ground EM survey.

In 1973, several of the showings were trenched, sampled, mapped geologically and tested with geochemical, IP and VLF EM surveys. The most interesting showing (SH 25) was trenched over a length of 55 feet in sulfide mineralization showing remarkable similarity in mineralogy and texture to that at the Strathcona Sound deposit 23 miles away.

These claims are included in a group of 979 claims optioned by Mineral Resources International Ltd. from Global Arctic Islands Ltd. and King Resources Co. early in 1974.

DESCRIPTION

The regional geology and references are the same as for the Strathcona Sound deposit (48 C/1) (p. 30), but the property is in the adjacent NTS area, Milne Inlet (Blackadar *et al.*, 1968a).

The area of interest is underlain by Society Cliffs dolomite. Hawker Creek itself follows a linear valley underlain by a gabbro dike. Such dikes form topographic lows in the Society Cliffs dolomite and highs in the softer flaggy Victor Bay shales. Small mounds of shale talus in the Hawker Creek area indicate that the topographic surface is near the top of the post-Victor Bay, Society Cliffs dolomite.

Sulphide mineralization in trench SH 25-1 comprises banded, coarse grained sphalerite with minor galena, carbonate and abundant massive pyrite and has an average grade of approximately 15.4% zinc and 1.6% lead. Thus it is identical to the Strathcona Sound deposit in mineralogy, texture, host rock, contact relationships, and average grade, but is apparently much smaller.

Karst features are common, including breccias enclosed by undisturbed beds, breccia zones that transect bedding but tend to parallel joints, and various collapse structures. Crossbedding, scour, slump and onlap structures indicate that sulphides were deposited and reworked within the caverns.

Several of the occurrences of sulphides are marked by an orange-brown staining downslope from their outcrop.

CURRENT WORK AND ACTIVITIES

Drilling of 1439 feet at Hawker Creek occurrences included 5 holes around the trench at SH 25, one hole near SH 23 and one hole in the pyrite sands at occurrence SH 26. Locally vein pyrite was encountered, but no sphalerite. The brecciation is neither as intense nor as widespread as the well developed and extensive breccia zone in the hanging wall of the Strathcona ore body. The trenches have deteriorated physically due to oxidation, caving and flooding. Summer run-off has frozen in the bottom of the trench, which is in permafrost.

During July and August 1974, geologists and geophysicists from New Jersey Zinc Ltd., Metallgesellschaft Ltd., and Watts, Griffith and McQuat Ltd. made VLF EM 16 and vertical loop REM surveys of the Hawker Creek area and other mineral prospects located by King Resources and Global Arctic. None of these prospects showed significant geophysical anomalies.

An airborne EM survey disclosed a moderate number of strong to intermediate anomalies at other locations. Ground investigations suggest that these anomalies are caused by non-economic conductors such as basic dikes, conductive overburden or sea-water.

Mineral Resources International Ltd. have dropped their option on all of the Global Arctic claims.

CORNWALLIS LEAD-ZINC DISTRICT

The geology of Cornwallis Island has been mapped and discussed by Thorsteinsson (1958) and Thorsteinsson and Kerr (1968). Mineral properties in the district are described briefly by Kerr (1975a) and Laporte (1974a).

The Cornwallis Lead-Zinc District (Kerr, 1976a) includes several gale-
na and sphalerite occurrences in the northern part of the Cornwallis Fold Belt. At the most important of these, the Polaris deposit of Arvik Mines Ltd. on Little Cornwallis Island, a large tonnage deposit had been outlined by 1971, sparking renewed interest in the area. Several new prospecting permits were obtained by Cominco Ltd. in 1972, and Canadian Superior Exploration Ltd. in 1973.

Thorsteinsson (1958, p. 116) proposed the name Cornwallis Fold Belt to include the north-northwesterly trending regional structure which embraces the Cornwallis Island Area (Fig. 13). Eastern Bathurst Island, western Grinnell Peninsula of Devon Island and parts of Somerset Island are also included. This structural sub-province developed in response to differential vertical movements of the underlying Precambrian basement of the Boothia Uplift (Kerr and Christie, 1965); movements that are recorded by angular unconformities in the Lower Paleozoic succession (Table V) and northerly trending folds, faults and grabens. In the Arctic Platform and Franklin Miogeosyncline, east and west of the Boothia Uplift, Lower

TABLE V

FORMATIONS AND UNCONFORMITIES ON CORNWALLIS ISLAND, N.W.T.
(from Thorsteinsson and Kerr, 1968)

A. South Cornwallis Island
(Allen Bay - Read Bay carbonate belt)

B. North Cornwallis Island
(Cape Phillips shale belt)

Era	Period	Formation and thickness in feet	Lithology	Lithology	Formation and thickness in feet
Cenozoic	Quaternary		Glacial gravels, morainal debris, silt, clay, stream sediments, marine beach deposits	Glacial gravels, morainal debris, silt, clay, stream sediments, marine beach deposits	
	Tertiary	Angular Unconformity		Angular Unconformity	
Mesozoic	Cretaceous	Eureka Sound 500 +	Sand, shale, clay, coal; minor sandstone (non-marine)		
		Angular Unconformity		Angular Unconformity	
Paleozoic	Devonian	Griper Bay 800 ±	Sandstone; minor siltstone, shale (marine)	Sandstone, minor siltstone, shale (marine)	Griper Bay 800 ±
		Angular Unconformity		Angular Unconformity	
		Bird Fiord 500 ±	Limestone, sandstone, siltstone (marine)	Limestone, sandstone, siltstone (marine)	Bird Fiord 500 ±
		Blue Fiord 100-150	Limestone (marine)	Limestone (marine)	Blue Fiord 100-150
		Disappointment Bay 400-830	Dolomite; minor conglomerate (marine)	Dolomite; minor conglomerate (marine)	Disappointment Bay 400-830
		Angular Unconformity		Angular Unconformity	
		Snowblind Bay 1,500 +	Limestone and dolomite conglomerate, dolomite, limestone, siltstone, sandstone (marine)	Limestone; minor dolomite and conglomerate	Stuart Bay 350 +
		Angular Unconformity - locally conformable		Angular Unconformity - locally conformable	
	Silurian	Read Bay 8,500 ±	Limestone; minor shale, dolomite, sandstone, siltstone (marine)	Shale, limestone, cherty limestone, chert, dolomitic limestone	Cape Phillips 9,800 ±
		Allen Bay 5,500 ±	Dolomite, minor limestone, shale (marine)		
	Ordovician	Cornwallis Group	Irene Bay 30-150	Shale, limestone (marine)	Irene Bay 30 - 150
			Thumb Mountain 1,700 ±	Limestone, dolomite (marine)	Thumb Mountain 1,700 ±
			Bay Fiord 1,000 ±	Gypsum, anhydrite, limestone; minor shale, siltstone (marine)	Bay Fiord 1,000 ±
			Eleanor River 2,000 ±	Limestone, minor dolomite (marine)	Eleanor River 2,000 ±
			Baumann Fiord 2,400 +	Gypsum, anhydrite; minor limestone, lime-pebble conglomerate (marine)	Baumann Fiord 2,400 +

Paleozoic strata form a conformable sequence and a later east-west structural grain is developed.

All of the important showings occur in the bioclastic upper part of the Ordovician Thumb Mountain Formation, where it has been locally dolomitized below the sub-Disappointment Bay unconformity. Light brown, fine grained sucrosic dolomite is cut by white, coarse sparry dolomite to form

pseudo-breccia. This and collapse or solution breccias indicate that karst processes played an important role in the genesis of the mineralization. Normally shale of the Cape Phillips Formation is present nearby and down-dip. Kerr (1975a, 1976a) suggests this unit was the source of the metals.

Jowett (1975) pointed out some of the similarities of the Polaris deposit with the Pine Point deposits and other Mississippi Valley type deposits. In the vicinity of Cornwallis Island, the host Thumb Mountain Formation has been successfully sub-divided into several mappable units (Table VI).

TABLE VI
MEMBERS OF THE THUMB MOUNTAIN FORMATION
IN THE VICINITY OF CORNWALLIS ISLAND

Unit No.	Unit Name	Description	Thickness (feet)
6.	Upper Mixed Fauna Member	Pale to medium grey, massive to thinly bedded, micritic and micritic skeletal limestones and their dolomitized equivalent.	120
5.	Bryozoan or Foram Member	Pale coloured micritic and micritic skeletal limestones with faunal content dominated by bryozoan	50
4.	Lower Mixed Fauna Member	Indistinguishable from the Upper Mixed Fauna Member (unit 6)	50
3.	D.B. Chert Member	Lithologically and faunally similar to adjacent members, this unit is readily identified by abundant secondary chert nodules.	20
2.	Tetradium Member	Pale grey to brown micritic and micritic skeletal limestone, a result of the prominent development of a colonial coral, tetradium cellulosum in the faunal assemblage.	70-90
1.	Shallow Marine Member	Basal member of the Thumb Mountain Formation, pale buff to grey coloured micritic skeletal limestone with massive laminated, mottled and burrowed phases. Cherty layers are present locally near the base of the member.	1,400

ASTEC PROPERTY
Cominco Ltd.
Suite 1700
120 Adelaide Street, W.
Toronto, Ontario M5H 1T1

Zinc, Lead
58 C/11
73°43'N, 95°00'W

REFERENCES

Blackadar (1967); Kerr and Christie (1965).

PROPERTY

PAT 1-10

LOCATION

The PAT claims or Astec Property are on a peninsula on the northeast shore of Aston Bay, northwest Somerset Island.

HISTORY

In 1966 sphalerite was found by Cominco prospectors during a general geochemical survey of Somerset Island. In 1973, the showing was revisited, mapped and staked.

DESCRIPTION

The showing consists of sphalerite rubble over an area 100 by 200 feet in sandy dolomite of Ordovician age believed to be a time equivalent of the Cornwallis Group or Allen Bay Formation (Blackadar, 1967). The sulphides appear to infill cavities and other solution features along the erosional surface between sandy dolomite and overlying quartz sandstone.

The property is on the eastern flank of the Boothia Uplift (Kerr and Christie, 1965), on the southern edge of the Cornwallis lead-zinc district.

CURRENT WORK AND RESULTS

No work was done on the PAT claims.

MEG GROUP - GRIFFITH ISLAND PROJECT
Cominco Ltd.
Suite 1700
120 Adelaide Street, W.
Toronto, Ontario M5H 1T1

58 F/12
74°32'N, 95°22'W

REFERENCE

Thorsteinsson and Kerr (1968).

PROPERTY

MEG 1-68

LOCATION

The claims are on south-central Griffith Island, 15 miles southwest of Resolute Bay, (25 Fig. 13).

HISTORY

MEG 1-68 were staked in 1973.

DESCRIPTION

A small area of Thumb Mountain Formation, exposed in an anticline on the southern shore of Griffith Island (Thorsteinsson and Kerr, 1968), is

covered by these claims.

CURRENT WORK AND RESULTS

A crew of two mapped and prospected the claims in 1974. The claims lapsed in 1975.

CORNWALLIS ISLAND PROJECT
Arvik Mines Ltd.
Yellowknife, N.W.T.

Zinc, Lead
58 F/14
58 G/5, 11

Cominco Ltd. (75%)
Suite 1700
120 Adelaide Street, W.
Toronto, Ontario M5H 1T1

Bankeno Mines Ltd. (25%)
Suite 908
40 University Avenue
Toronto, Ontario M5J 1T1

REFERENCES

Kerr (1975a); Laporte (1974a); Thorsteinsson (1958); Thorsteinsson and Kerr (1968).

PROPERTIES

Five separate claim groups were explored in 1974 by Cominco Ltd. under the Cornwallis Island Project. These are the (1) MUSKOX, (2) ALL and BRAN, (3) ROOK, (4) WALRUS and (5) JULIET. As they are widely separated on the Island they are treated separately under the Cornwallis Island Project.

MUSKOX CLAIMS

58 F/14
75°57'N, 94°50'W

PROPERTY

MUSKOX 1-18

LOCATION

The MUSKOX group lies 18 miles north of Resolute Bay, near the Taylor River, (24 Fig. 13).

HISTORY

A lead-zinc showing was discovered near the Taylor River during reconnaissance of Cornwallis Island in 1964. The 18 MUSKOX claims were staked, geologically mapped and soil sampled in 1965; additional mapping was done in 1970. In 1973 the claims were surveyed.

DESCRIPTION

Small surface showings and geochemical anomalies occur in dolomitized

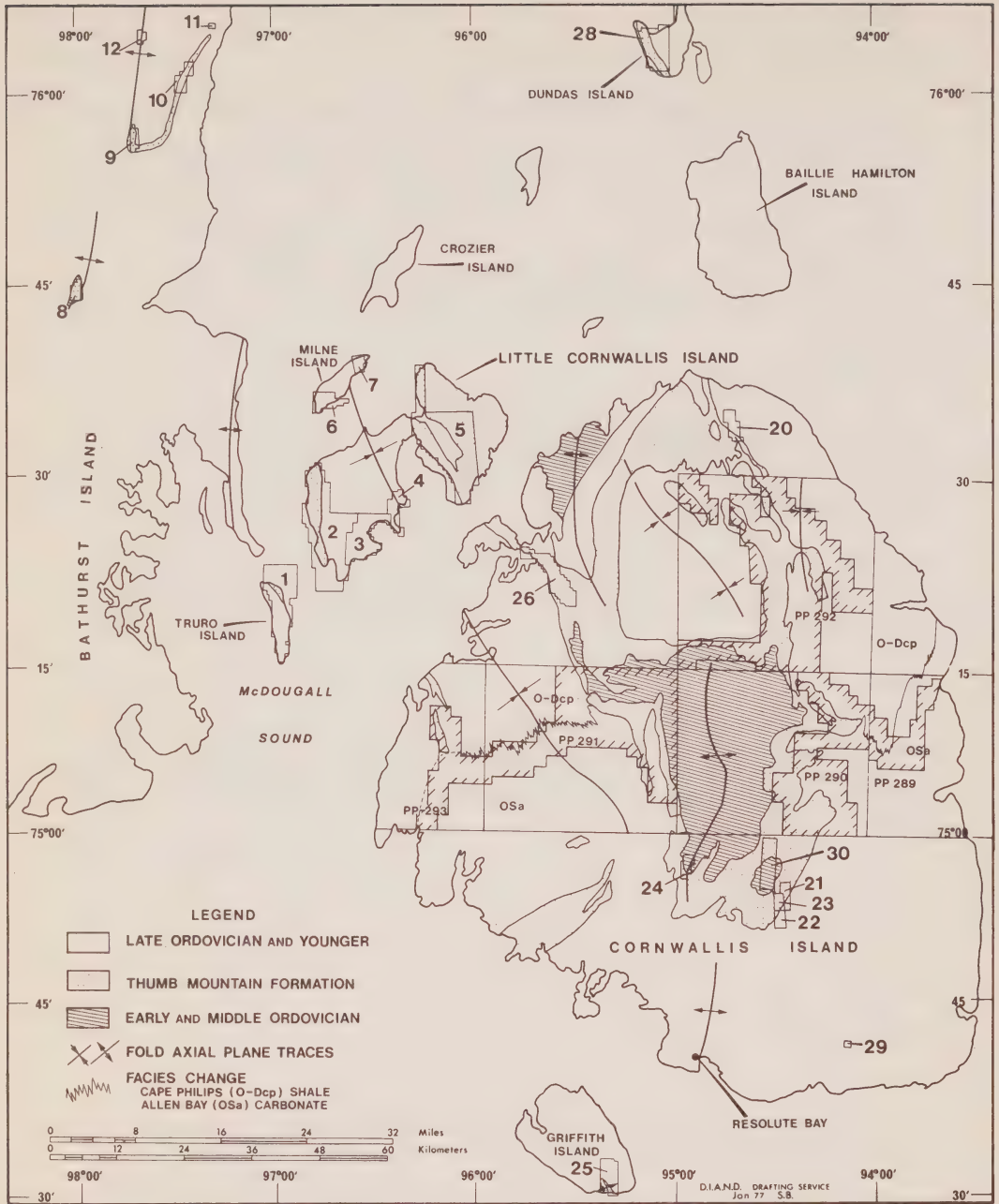
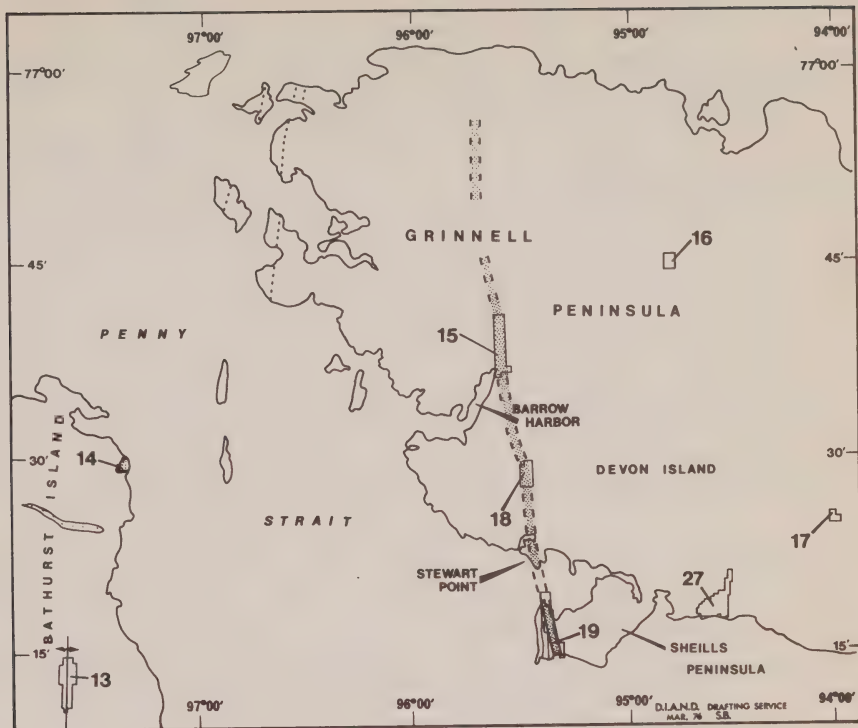


Figure 13. Distribution of the Thumb Mountain Formation and areas explored in the northern Cornwallis Fold Belt. Geology from Thorsteinsson and Kerr (1968).



Northward continuation of Figure 13 on facing page.

Claim Groups and Geology
in the Cornwallis Lead-Zinc District of the Central Arctic Islands

Index Nos.	Property and Claim Names	Index Nos.	Property and Claim Names	Index Nos.	Property and Claim Names
1	VENUS	6	MIL	19	HECLA
2	Polaris Property: POLARIS, TAG, GAR, RID, WEB, MARY, VAT, TWIN, POL	7	LYNN	20	WALRUS
3	COR	8	TUKTO	21	BAC*
4	LEE	9	APOLLO	22	BRAN
5	Eclipse Property: WAL, TUNDRA, ECLIPSE and 49 unnamed claims	10	AQUARIUS	23	ALL
		11	GRINCH	24	MUSKOX
		12	IDJUK	25	MEG
		13	AGPAN	26	ROOK
		14	ORGAN	27	HORNBY
		15	BEARD	28	NOP
		16	EREBUS	29	JULIET
		17	TERROR	30	SUP*
		18	USUNG		

*All claims are owned by Arvik Mines and/or Cominco Ltd. except for the SUP and BAC groups of Canadian Superior Ltd. Prospecting Permits 289-293 are held by Canadian Superior Exploration Ltd.

Thumb Mountain Formation on the MUSKOX claims. Galena predominates over sphalerite in sulphides which are low grade and sporadic.

CURRENT WORK AND RESULTS

In June 1974 the 18 MUSKOX claims became Mineral Lease 2685.

ALLEN BRANCH PROPERTY

58 F/14
74°53'N, 94°24'W

PROPERTY

ALL 1-15, 18-23, 26-29

BRAN 1-15

LOCATION

The Allen Branch property is situated on southeastern Cornwallis Island, 16 miles north east of Resolute Bay (22 and 23, Fig.13).

HISTORY

The Allen Branch showings were discovered in 1965 during regional stream sediment and soil geochemical sampling.

In 1966, Prospecting Permit 55 was obtained and soil sampling, mapping and IP surveys identified a large geochemical anomalies and numerous IP anomalies, but no further work was done and the permit lapsed.

In 1970, the area was re-examined and in 1971, a new prospecting permit (256) was obtained. Detailed mapping at 1 inch to 800 feet and Winkie drilling of 339 feet in 14 holes was inconclusive.

In 1973, the ALL claims were staked to cover most of the mineralization within the northernmost portions of the Allen Branch graben. At the same time, Canadian Superior Exploration staked the adjacent BAC group west of the ALL claims.

In 1974 Cominco added the BRAN group to cover the southern extension of the graben.

DESCRIPTION

The claims cover a north-south graben which parallels the axis of the Bacon River anticline (Thorsteinsson and Kerr, 1968). Showings occur in dolomitized Allen Bay Formation within the graben and outside the Cape Phillips shale belt, at odds with two of Kerr's criteria and most of the known lead-zinc showings in the Cornwallis Fold Belt (Kerr 1975a). Pre-Allen Bay, Thumb Mountain Formation outside the graben is remarkably undolomitized, and indicates that the graben is an important control for mineralization. The mineralized Allen Bay is extensively dolomitized, oxidized and leached.

Most of the mineralization occurs within a unit of the Allen Bay Formation that is a pale buff biomicrite with extensive orange to brown argillaceous burrows outside the graben but, in the graben it is extensively dolomitized and has numerous stylolites and bitumen residues.

CURRENT WORK AND RESULTS

In 1974, twenty-two line-miles of gravity survey explored for drill targets within the graben and some of the geology was briefly reexamined.

ROOKERY CREEK PROPERTY

58 G/5
75°23'N, 95°40'W

PROPERTY

ROOK 1-21

LOCATION

The ROOK group is on Rookery Creek in northwestern Cornwallis Island, about 40 miles north-northwest of Resolute Bay, (26, Fig.13).

HISTORY

Prospecting by Bankeno Mines Ltd. located gossans in the Rookery Creek Area in 1964. In 1965 Cominco Ltd. conducted stream sediment geochemistry which located anomalies.

Cominco obtained Prospecting Permit 255 in 1971 and reconnaissance geological mapping and geochemical prospecting that year was followed by detailed surficial mapping and a gravity survey of the south showing in 1972.

Detailed mapping and a gravity survey of the north showing by Cominco in 1973 preceded the staking of the 121 ROOK claims to cover the area around two showings.

DESCRIPTION

Two showings outlined in the Rookery Creek area are the south showing (75°20'N, 94°34'15"W) consisting of trace amounts of brown sphalerite in dolomite and the north showing (75°24'30"N, 95°41'30"W) consisting of a small amount of galena and sphalerite. Detailed mapping around the south showing outlined a north-northwest trending graben and to the west a horst of Thumb Mountain Formation units overlain by Irene Bay Formation shales.

The Thumb Mountain Formation in the area is almost entirely dolomitized and psuedo-breccias have formed in places. The pseudo-breccias typically are dark brown dolomites with vuggy white sparry dolomite parallel to bedding. Small amounts of bitumen are present.

Small amounts of mineralized rubble are widely spread around the showings. Gossans are relatively well developed.

CURRENT WORK AND RESULTS

Two drill holes, totalling 1004 feet in length, tested gravity anomalies in the Thumb Mountain Formation near the southern showing. Economic lead-zinc mineralization was not encountered.

STUART RIVER PROPERTY

58 G/11
75°35'N, 94°35'W

PROPERTY

WALRUS 1-40

LOCATION

The WALRUS claims lie 4 miles south of Stuart Bay near the Stuart River, on the north coast of Cornwallis Island, (20 Fig. 13).

HISTORY

The WALRUS claims, staked in 1965 to cover geochemical anomalies, were explored in 1966 by detailed and reconnaissance geochemical, geological and IP surveys and by 376 feet of drilling in 3 holes. The drilling gave inconclusive results. In 1970, eight line miles of gravity and additional geological surveys were done.

DESCRIPTION

The property is underlain by the normal Cornwallis Group sequence, Bay Fiord, Thumb Mountain and Irene Bay Formations. A thick patch of Devonian Disappointment Bay Formation unconformably overlies these in what appears to be a paleo-depression, possibly a paleo-sinkhole. The significant mineralization, in the basal conglomeratic units of the Disappointment Bay Formation, includes marcasite, sphalerite, galena, dolomite and late calcite. Marcasite is widely disseminated and locally comprises 20% of the rock. Bitumen is fairly common in vugs and minor smithsonite has been found on the claim block.

Gravity and drilling results were discouraging and mineralization found to date is sufficient to account for the geochemical anomalies.

CURRENT WORK AND RESULTS

In June 1974, the 40 WALRUS claims became mining lease 2686.

JULIET CLAIMS

58 F/1
74°40'N, 94°10'W

PROPERTY

JULIET 1-4

LOCATION

The JULIET group is 16 miles due east of the Resolute Bay airport (29 Fig. 13).

CURRENT WORK AND RESULTS

The claims were staked in 1974, but as no work has been recorded the claims are expected to lapse.

CORNWALLIS ISLAND PROJECT
PROSPECTING PERMITS 289-293

Canadian Superior Exploration Ltd.
Suite 2201
1177 West Hastings Street
Vancouver, B.C. V6E 2K3

Zinc, Lead
58 F/14
58 G/2, 3, 4, 6
68 F/14
75°15'N, 94°55'W

REFERENCES

Kerr (1975a, 1976a); Laporte (1974a pp. 159-162, 1974b pp. 64-66); Padgham *et al.* (1976); Thorsteinsson (1958); Thorsteinsson and Kerr (1968).

PROPERTY

Prospecting Permit 289	58 G/2
Prospecting Permit 290	58 G/3
Prospecting Permit 291	58 G/4
Prospecting Permit 292	58 G/6
Prospecting Permit 293	68 H/1
BAC 71-86, 88-93, 96-100, 105-108 and SUP 1-114	58 F/14

LOCATION

All of the permits and claim groups are on Cornwallis Island, (Fig. 13). The 31 BAC and 114 SUP claims lie approximately 20 miles north-northeast of Resolute. The SUP group (30 Fig. 13) extends north from the headwaters of the Bacon River; the BAC group (21 Fig. 13) is immediately southeast of the SUP group and east of the ALL and BRAN groups of Cominco Ltd. on the Allen Branch, a tributary of the Allen River.

HISTORY

Permits 289-293 were granted in 1973. They are held jointly by Canadian Superior Exploration Ltd., the operators, British Newfoundland Exploration Ltd. and Home Oil Company Ltd. NTS areas 58 G/3 (Prospecting Permit 290) and 58 G/6 (Prospecting Permit 292) were previously held by Cominco Ltd. under Prospecting Permits 54 and 53 respectively (1966-1967). NTS 58 G/6 was also held by Bayou Petroleum Ltd. under Prospecting Permit 220 (1970-1973), (Laporte 1974a, pp. 159-162; 1974b, pp. 64-66). The BAC claims were staked in 1973 to cover Thumb Mountain strata on the southwestern limb of the Bacon Anticline (Thorsteinsson and Kerr, 1968).

Exploration has been mainly the mapping and testing of dolomitized portions of the favourable Thumb Mountain Formation, which is present on all of the permit areas.

DESCRIPTION

Prospecting Permits 289-293, and the BAC and SUP claims cover portions of the outcrop and down-dip extensions of the Thumb Mountain Formation on Cornwallis Island (Fig. 13).

CURRENT WORK AND RESULTS

Between late May and August 1974, exploration continued on the reduced permits (Fig. 13). Reconnaissance mapping, prospecting, detailed mapping, soil geochemistry and gravity surveys were conducted from two main camps by 20 men with helicopter support.

In the Abbott River west area, 13 holes (9000 feet) were drilled to test gravity anomalies and mineralized showings. The results were regarded as inconclusive. Further drilling is expected in 1975.

DUNDAS ISLAND PROJECT
Cominco Ltd.
Suite 1700
120 Adelaide Street, W.
Toronto, Ontario M5H 1H1

Lead, Zinc
59 B/3, 4
76°05'N, 95°W

REFERENCES

Kerr (1975a); Thorsteinsson (1973).

PROPERTY

NOP 5-15, 18-26, 29-46, 51-67, 72-87, 92-133

LOCATION

The NOP claims cover the western half of Dundas Island, 100 miles due north of Resolute Bay (28 Fig. 13).

HISTORY

After the success at Polaris and the discovery of a spectacular showing on Truro Island in 1971 Cominco obtained several prospecting permits in areas of favourable geology. Several showings were discovered on Dundas Island and Shiells Peninsula during geological and geochemical surveying in 1972. Additional showings were found in 1973 and gravity surveys tested some of the better showings on Dundas Island.

DESCRIPTION

Mineralized Thumb Mountain Formation strata form the western limb of a broad open syncline that underlies Dundas Island (Thorsteinsson, 1973). Several showings and geochemical anomalies occur along this belt. The best showing is near the southwest corner of the island where high grade lead-zinc float is abundant in the surface rubble. Smithsonite is common in this surficial material.

The chert chip conglomerate member of the Disappointment Bay Formation is abundant and well developed, and at one locality it contains a gossaneous paleo-soil containing low grade lead-zinc mineralization. In places it occupies paleo-depressions that may be sinkholes on the surface of the Thumb Mountain Formation.

CURRENT WORK AND RESULTS

The NOP claims were staked to cover mineral showings and gravity anomalies in the Thumb Mountain Formation as Prospecting Permits 274 and 275 were due to expire.

SHEILLS PENINSULA PROJECT
Cominco Ltd.
Suite 1700
120 Adelaide Street, W.
Toronto, Ontario M5H 1T1

Lead, Zinc
59 B/4, 5
76°17'N, 95°20'W

REFERENCES

Kerr (1975a); Kerr *et al.* (1973).

PROPERTY

HECLA 1-39, 41-46
HECLA 47-74

59 B/5
59 B/4

LOCATION

The HECLA claims are on the western Sheills Peninsula, which is on the southern coast of the Grinnell Peninsula of Devon Island (19 Fig. 13). The Sheills Peninsula is less than 10 miles north of Dundas Island and is underlain by the same northerly trending belt of Thumb Mountain Formation.

HISTORY

Prospecting Permit 275 (59 B/4) was one of 8 permits on and around Grinnell Peninsula that were granted to Cominco in the spring of 1972. Reconnaissance geology and geochemistry located lead-zinc showings on Sheills Peninsula and 39 HECLA claims were staked over ground not included in Prospecting Permit 275.

Detailed geological and gravity surveys were done in 1973.

DESCRIPTION

Lead-zinc mineralization occurs in the Thumb Mountain Formation beneath the sub - Disappointment Bay unconformity on western Sheills Peninsula (Kerr *et al.*, 1973; Kerr, 1975a). A few minor showings also occur in the Disappointment Bay Formation.

CURRENT WORK AND RESULTS

Eight holes totalling 5274 feet tested showings in the Thumb Mountain Formation. HECLA 47-74 were staked in 59 B/4 as Prospecting Permit 275 was due to expire.

HORNBY CLAIMS
Cominco Ltd.
Suite 1700
120 Adelaide Street, W.
Toronto, Ontario M5H 1T1

Copper, Lead, Zinc
59 B/6
76°18'N, 94°22'W

REFERENCES

Kerr (1975b, 1975c); Morrow (1973); Morrow and Kerr (1975).

PROPERTY

HORNBY 1-99

LOCATION

The HORNBY property (27 Fig. 13) lies on the south coast of the Grinnell Peninsula, about 5 miles east of Cape Hornby and 120 miles north of Resolute Bay.

HISTORY

Cominco discovered copper and lead mineralization in pseudo-breccias developed in limestones of the Allen Bay and Cape Storm Formations on Prospecting Permit 276 in 1972 and 1973.

DESCRIPTION

The geology of southeastern Grinnell Peninsula is described by Morrow (1973) and Morrow and Kerr (1975). The Cape Storm Formation recently defined by Kerr (1975b, 1975c) includes strata previously included with the underlying Allen Bay and overlying Douro Formations.

On the HORNBY property, mineralization is found in both the Allen Bay and Cape Storm Formations, but the most significant showings are in the latter. Mineralization is found within a few hundred feet horizontally of the unconformable contact with the overlying Middle Devonian Prince Alfred Bay Formation where the host rocks have been partially dolomitized and pseudo-brecciated as a result of subaerial exposure and erosion.

Chalcocite in fine disseminations or in high grade chunks up to 5 inches across is extensively oxidized to malachite and lesser azurite. Lead and minor zinc mineralization are distinct from the copper. However, all three minerals are found as disseminated grains associated with vuggy areas of sparry pseudo-breccia or less commonly crackle-breccia devoid of spar.

Most of the showings are small and much of the mineralization is in scree or rubble. Linear showings suggest local fault control.

CURRENT WORK AND RESULTS

In 1974, prospecting located new showings and the 99 HORNBY claims were staked prior to the expiry of Prospecting Permit 276.

GRINNELL EAST PROJECT
Cominco Ltd.
Suite 1700
120 Adelaide Street, W.
Toronto, Ontario M5H 1T1

59 B/6, 7, 11, 12
76°45'N, 94°35'W

REFERENCES

Morrow (1973); Morrow and Kerr (1975).

PROPERTY

TERROR 1-8	59 B/6, 7
EREBUS 1-20	59 B/11, 12

LOCATION

The TERROR group is on the eastern Grinnell Peninsula, 10 miles north-northwest of Prince Alfred Bay (17 Fig. 13).

The EREBUS claims are about 12 miles south of the mouth of the Ensorcellement River in the northeastern Grinnell Peninsula (16 Fig. 13).

HISTORY

These claims were staked during a 1972 reconnaissance of the Grinnell Peninsula.

DESCRIPTION

The TERROR group covers a geological environment similar to that on the HORNBY group: Cape Storm and Allen Bay Formations unconformably overlain by the Prince Alfred Formation.

The EREBUS group cover a geochemical anomaly in a stream draining gossans that gave high lead values. Gossans on the claims are due to the weathering of abundant marcasite mineralizing fault breccias in dolomitized Bay Fiord Formation. This dolomitization appears to be related to the sub-Disappointment Bay unconformity.

CURRENT WORK AND RESULTS

The TERROR and EREBUS groups lapsed at the end of 1974.

GRINNELL CENTRAL PROJECT	59 B/5, 12, 13
Cominco Ltd.	76°30'N, 95°W
Suite 1700	
120 Adelaide Street, W.	
Toronto, Ontario M5H 1T1	

REFERENCE

Kerr *et al.* (1973)

PROPERTY

USUNG 1-25	59 B/5
BEARD 1-80	59 B/12
Prospecting Permit 227	59 B/13

LOCATION

The USUNG and BEARD groups and Permit 277 cover parts of a northerly trending belt of Thumb Mountain Formation that extends from the NOP claims on Dundas Island to the south, through the HECLA group on Sheill's Peninsula, the USUNG group near Stewart Point, the BEARD group on the east end of Barrow Harbour to Prospecting Permit 277 on the north coast of Grinnell

Peninsula between longitudes 95°W and 96°W (28, 19, 18 and 15 Fig. 13).

HISTORY

In April 1972, Cominco Ltd. obtained prospecting permits on the western Grinnell Peninsula. A large scale reconnaissance of the Grinnell Peninsula in 1972 included: delineation of the Thumb Mountain Formation by mapping, detailed prospecting of favourable strata, and stream sediment sampling. The USUNG and BEARD groups were staked over northerly trending Thumb Mountain strata in the central part of the Grinnell Peninsula.

DESCRIPTION

Within the northern half of Grinnell Central the Thumb Mountain Formation is limestone with neither mineralization nor the diagenetic textures commonly associated with sulphide. In the southern half of Grinnell Central the Thumb Mountain is variably dolomitized and weakly pseudo-brecciated.

CURRENT WORK AND RESULTS

The USUNG group lapsed and Prospecting Permit 277 expired in 1974.

TRURO ISLAND PROJECT
Cominco Ltd.
Suite 1700
Toronto, Ontario M5H 1T1

Lead, Zinc
68 H/7
75°19'N, 97°09'W

REFERENCE

Kerr (1974, 1975a).

PROPERTY

VENUS 3-11, 13-141, 155-179

LOCATION

The VENUS claims cover most of Truro Island (1 Fig. 13) which is about 5 miles southwest of the Polaris deposit.

HISTORY

In 1971 reconnaissance prospecting located a high grade lead-zinc showing on the east side of Truro Island. Geochemistry, geological mapping, gravity and drilling of 317 feet in 10 holes tested the claims in 1972. The gravity survey was completed in 1973.

DESCRIPTION

Truro Island has been mapped by Kerr (1974). The VENUS property occupies a position on the west side of the Crozier Strait anticline similar to that of the Polaris deposit on the east side of the anticline (Fig. 2, Kerr, 1975a). Numerous showings and geochemical anomalies are found in the Thumb Mountain Formation along the northeast coast of the island where an outcrop a few feet above sea level contains a 20 to 30 foot long, 5 to 10 foot wide high grade galena showing.

Drilling indicated some good but short intersections. The best assayed 23.06% combined lead-zinc over 12 feet.

CURRENT WORK AND RESULTS

A little drilling was done on the property near the end of the 1974 field season. The 50 TRU claims off the north end of Truro Island and several VENUS claims lapsed in 1974.

LITTLE CORNWALLIS ISLAND PROJECT
Arvik Mines Ltd.
Yellowknife, N.W.T.

Zinc, Lead
68 H/8, 9
75°30'N, 96°30'W

Cominco Ltd. (75%)
Suite 1700
120 Adelaide Street, W.
Toronto, Ontario M5H 1T1

Bankeno Mines Ltd. (25%)
Suite 908
40 University Avenue
Toronto, Ontario M5J 1T1

REFERENCES

Brown (1973); Jowett (1975); Kerr (1975a); Laporte (1974a, pp. 164-166; 1974b, pp. 70-71); Muraro (1974); Padgham *et al.* (1976); Tanaka (1972); Thorpe (1966); Thorsteinsson and Kerr (1968).

PROPERTY

Polaris property:
POLARIS 1-12, TAG 1-10, GAR 1-17, Rid 1-99, 68 H/8
WEB 1-4, MARY 1-19, TWIN 1-26, VAT 1-26,
LEE 1-58, COR 1-45, POL 1-283

Eclipse property:
ECLIPSE 1-22, TUNDRA 1-19, WAL 1-431 68 H/8, 9
and 49 unnamed claims

LOCATION

These properties are on Little Cornwallis Island, 65 to 70 miles north-northwest of Resolute Bay. Little Cornwallis Island consists of two roughly circular 10 mile diameter lobes that are joined by a narrow isthmus. The Polaris deposit lies near the south end of the west shore of the southwest lobe, and the Eclipse property is 17 miles to the northeast near the geographic centre of the northeast lobe (2 and 5 Fig. 13).

HISTORY

The first discovery of lead-zinc sulphides was made in 1960 by geologists of J.C. Sproule Associates, who were investigating the regional petroleum potential for Bankeno Mines Ltd., holder of oil and gas permits in the area. Bankeno staked Polaris 1-21, drilled 9 holes totalling 623 feet, and initiated prospecting which led to the discovery of the Eclipse showing. Bankeno obtained Prospecting Permits 19 and 20 covering Little Cornwallis Island in 1961, then prospected and mapped the island. The 22

ECLIPSE claims were staked and sampled in 1963.

Cominco Ltd. optioned Bankeno's properties in 1964 and has managed the program ever since. They conducted geochemical sampling and geologic mapping, and staked TUNDRA 1-19 at Eclipse.

A total of 2311 feet of drilling in 37 holes and 15.15 miles of IP surveys tested the ECLIPSE-TUNDRA groups in 1965, and 49 unnamed claims were added to the property.

In 1966, 8 holes totalling 1522 feet were drilled at Eclipse. Eleven miles of IP and soil geochemical surveys, and 200 cubic yards of trenching were done on the Polaris property.

The 1965-1966 drilling established 1 million tons averaging 15% combined lead-zinc on the Eclipse property (Tanaka, 1972). During 1968 the program was re-evaluated. Geochemical and geological surveys at Eclipse and Polaris, and gravity and IP surveys at Polaris in 1970, established the POLARIS group as a high priority drill target. POLARIS 1-12 became mining lease 2346 on August 11, 1970.

Cominco Ltd. was granted Prospecting Permits 253 and 254 in 1971. Detailed geological and extensive gravity surveys explored Little Cornwallis Island in 1971, and over 34,000 feet drilled in 45 holes indicated some 20 million tons averaging 20% combined lead and zinc in the Polaris deposit. Details of this drilling were published in the Northern Miner of September 23, 1971 and November 3, 1972.

A permanent camp was set up at Polaris in 1972. During 1972-1973 over 5000 feet of lateral underground development was completed by J.S. Redpath Ltd, mining contractors. Between March and June 1973 Heath and Sherwood Ltd., drilling contractors, drilled 22,513 feet underground at the new Polaris mine. In July and August 14,405 feet were drilled from surface in 27 widely spaced holes on Little Cornwallis Island. In August 3600 tons of high grade lead-zinc ore was shipped by sea for metallurgical tests and additional claim groups were staked when Cominco's prospecting permits lapsed.

A detailed feasibility study was begun in 1973.

DESCRIPTION

The regional geology of Little Cornwallis Island and adjacent islands, including Cornwallis Island, is given by Thorsteinsson and Kerr (1968). Most of the lead-zinc showings in the area, including both the Polaris and Eclipse deposits are found in the Cornwallis Fold Belt, near the top of the Ordovician Thumb Mountain Formation, in the geographic area where the Cape Phillips Formation was deposited and where the host formation is truncated and overlain by a Lower Devonian formation (Kerr, 1975a).

The Polaris deposit lies on the eastern limb of the Crozier Strait Anticline (Fig. 2, Kerr, 1975a). Strata of the enclosing Thumb Mountain Formation have an average dip of 15° east. Around Polaris most of the carbonate has been altered to light brown, fine grained dolomite.

The original Polaris discovery of 1960 comprises three areas of frost-shattered dolomite and oxidized sulphide rubble forming a mile long north-northwesterly trend. At the longest zone, the north showing, mineralized rubble found over an area 600 by 100 feet, consists of fragments

ranging from one foot diameter blocks of mineralized dolomite to galena sand and clay-sized, rust coloured material. Some barite, secondary smithsonite and iron oxides are associated with the surface mineralization.

Drilling has outlined a 2000 foot long, 700 foot wide, 100 to 450 foot thick deposit, dipping 15° east, conformably with the enclosing host rock. It is irregular in shape particularly in cross section. In most cases a conformable, roughly tabular section of mineralization is present and some sections show a thick keel-like extension of the mineralization below the tabular zone. Dolomitization of the enclosing Thumb Mountain Formation shows an irregular but definite spatial relationship to the mineralization. In places breccia zones occur, in others a marker bed containing chert nodules appears to continue through the ore zone. Dolomitization, brecciation and cavern formation due to solution, and mineralization of the Thumb Mountain Formation here and at other localities in the region appear to be related to an early Devonian, sub-Disappointment Bay Formation angular unconformity (Kerr, 1975a).

Sphalerite and galena, with minor pyrite or marcasite and dolomite and calcite make up the deposit. Sphalerite is usually colloform and occurs as fine colour banded botryoids or encrustations. Less commonly it occurs as dark brown crystals. Coarse galena cubes form vug linings and are disseminated in both massive and disseminated zones. Coarse sparry dolomite lines cavities in the ore zone, commonly with later calcite druses and sparry dolomite veins which form pseudo-breccia (Jowett, 1975).

According to Cominco's 1974 Annual Report the 25,000,000 ton deposit contains 4,700,000 tons of metal. It has an average grade of 18.9%. The average zinc to lead ratio is 5 to 1. Silver and cadmium values are not significant.

The geology of the Eclipse property is virtually identical to that of the Polaris. Three showings are distributed along the southwest flank of a north-northwest trending open anticline. Work on the property was concentrated in 1965 and 1966 when drilling outlined 1,000,000 tons averaging 12.43% zinc and 2.18% lead on the north showing (Laporte, 1974a).

The surrounding WAL group is underlain by favourable Thumb Mountain strata but important mineralization has not been found.

CURRENT WORK AND RESULTS

The Polaris mine has been closed since 1973. Mining leases 2644, 2658, 2659 and 2660 were taken out early in 1974 for the ECLIPSE, TUNDRA and the unnamed claims which together cover the Eclipse deposit. Summer work included diamond drilling and gravity surveying on the WAL claims surrounding the Eclipse property and environmental studies of Crozier Strait and inland lakes on Little Cornwallis Island that might be suitable tailing disposal areas.

Feasibility studies completed on the high grade Polaris deposit showed that commercial production at this northern location is economic under appropriate conditions. Discussions are currently underway with the federal government to resolve problems related to the further development of this project (Cominco Ltd. Annual Report, 1974).

MIL AND LYN CLAIMS
Cominco Ltd.
Suite 1700
120 Adelaide Street, W.
Toronto, Ontario M5H 1T1

68 H/9
75°37'N, 96°50'W

PROPERTY

MIL 1-31
LYN 1-20

LOCATION

The MIL and LYN (6 and 7 Fig. 13) are located on the southwest and northeast end of Milne Island.

HISTORY

The claims, which were staked in 1973, cover ground previously included in Prospecting Permit 254 issued in 1971, Prospecting Permit 56 issued in 1966 and Prospecting Permit 20 issued in 1961.

DESCRIPTION

The claims are 15 miles along stike north of the Polaris deposit. Milne Island is mainly covered by raised beaches and probably there are no outcrops on the claims.

CURRENT WORK AND RESULTS

The claims lapsed in 1975.

BATHURST ISLAND PROJECT-SCORESBY PROPERTIES
Cominco Ltd.
Suite 1700
120 Adelaide Street, W.
Toronto, Ontario M5H 1T1

68 H/11, 14
69 A/2, 3, 7
76°05'N, 98°W

REFERENCES

Kerr (1974, 1975a).

PROPERTY

TUKTO 1-23
APOLLO 1-29
GRINCH 1-4, AQUARIUS 1-37
AGPAN 1-62
IDJUK 1-14
ORGAN 1-13

68 H/11
68 H/11, 14
69 A/2
69 A/2, 3
69 A/3
69 A/7

LOCATION

All of the claims are on the northern half of the eastern margin of Bathurst Island (8 through 14 Fig. 13).

HISTORY

Reconnaissance prospecting in 1971 resulted in the staking of the APOLLO 1-18 and AQUARIUS 1-18 groups. The remaining claims were staked and prospected in 1972.

DESCRIPTION

In eastern Bathurst Island, two fold belts intersect at right angles. The northerly trending Cornwallis Fold Belt first developed from differential vertical movement in the underlying Precambrian basement in early to late Devonian time: the east trending Parry Islands Fold Belt developed later (Kerr 1974).

The oldest rocks exposed in eastern Bathurst Island are Ordovician carbonates of the Cornwallis Group which are overlain by Upper Ordovician to Lower Devonian graptolitic shale in turn overlain by increasingly coarse grained clastic rocks of Early Devonian age.

The Scoresby properties are in the Cornwallis Fold Belt and the Thumb Mountain Formation outcrops on all but the IDJUK group. The APOLLO and ORGAN have abundant sparry dolomite and pseudo-breccia. Barite occurs in a fault breccia in the Thumb Mountain Formation on the TUKTO claims. Dolospar and traces of sphalerite occur locally on the AGPAN group. The AQUARIUS group contains a small smithsonite showing, which has been tested by a gravity survey. The GRINCH claims cover a geochemically anomalous soil gossan in the Thumb Mountain Formation.

CURRENT WORK AND RESULTS

Mapping, prospecting and geochemistry were done on the TUKTO, AGPAN, ORGAN and IDJUK. A similar program on the GRINCH was interrupted by a polar bear. The APOLLO and AQUARIUS 19-37 claims have lapsed.

GRINNELL WEST PROJECT
Cominco Ltd.
Suite 1700
120 Adelaide Street, W.
Toronto, Ontario M5H 1T1

69 A/9, 10, 15, 16
76°45'N, 97°00'W

REFERENCES

Kerr (1975a, 1975b); Kerr *et al.* (1973).

PROPERTY

Prospecting Permit 278	69 A/9
Prospecting Permit 279	69 A/10
Prospecting Permit 280	69 A/15
Prospecting Permit 281	69 A/16

LOCATION

The permits cover the northwest corner of the Grinnell Peninsula and adjacent islands.

HISTORY

The project deals with 4 prospecting permits granted in 1972. During that year extensive reconnaissance located favourable stratigraphy for more detailed mapping, sampling and prospecting in 1973. Permit 279 was relinquished in early 1974.

DESCRIPTION

Thumb Mountain Formation occurs on northwestern Grinnell Peninsula in the vicinity of Pelham Bay and Village Bay and on Spit Kate and Pioneer Islands. The subdivision of the Thumb Mountain Formation derived on Cornwallis Island cannot be used in this area.

Kerr's (1975a) 'geological circumstances' associated with lead-zinc mineralization: the Thumb Mountain Formation, the sub-Disappointment Bay unconformity, the Cape Phillips shale and Cornwallis Fold Belt, are all present in the Grinnell West Project area, but despite good exposure only a few rusty gossans formed on iron sulphides were found in the Thumb Mountain Formation.

Kerr (1975b) described a sub-Cape Storm angular unconformity of Silurian age that cuts through Allen Bay, Cape Phillips, and Irene Bay Formations to lie directly on the Thumb Mountain Formation on western Grinnell Peninsula.

CURRENT WORK AND RESULTS

No claims have been staked and the remaining permits expired in April 1975.

ELLESMERE ISLAND - FRANKLIN MIOGEOSYNCLINE

In 1973 and 1974, lead-zinc exploration was extended to the Franklin Miogeosyncline of Ellesmere Island (Fig. 14). This belt contains large areas of Thumb Mountain Formation strata, host to the large lead-zinc deposits on Little Cornwallis Island, the Cape Phillips Formation, possible source rock of the lead-zinc, and the Cape Phillips shale to Allen Bay/Read Bay carbonate facies change which is also found near known lead-zinc deposits (Table VII) (Kerr 1975a, 1976a). Cominco Ltd., Kapvik Exploration Ltd. and Great Plains Development Ltd. explored parts of the area.

The geological evolution of the Franklin Miogeosyncline has been described by Kerr (1967, 1968 and 1976b). It began to form in Proterozoic time when sediments were deposited unconformably on the eroded Precambrian Shield. During more than 200 million years, the geosyncline gradually became wider and deeper, reaching a maximum width and depth in Late Ordovician time. In the next approximately 100 million years, until Late Devonian time, the geosyncline became progressively narrower and shallower, as it filled with sediments. This was a waning phase during which deposition in the basin ended and the Late Devonian Ellesmerian Orogeny produced deformation and uplift.

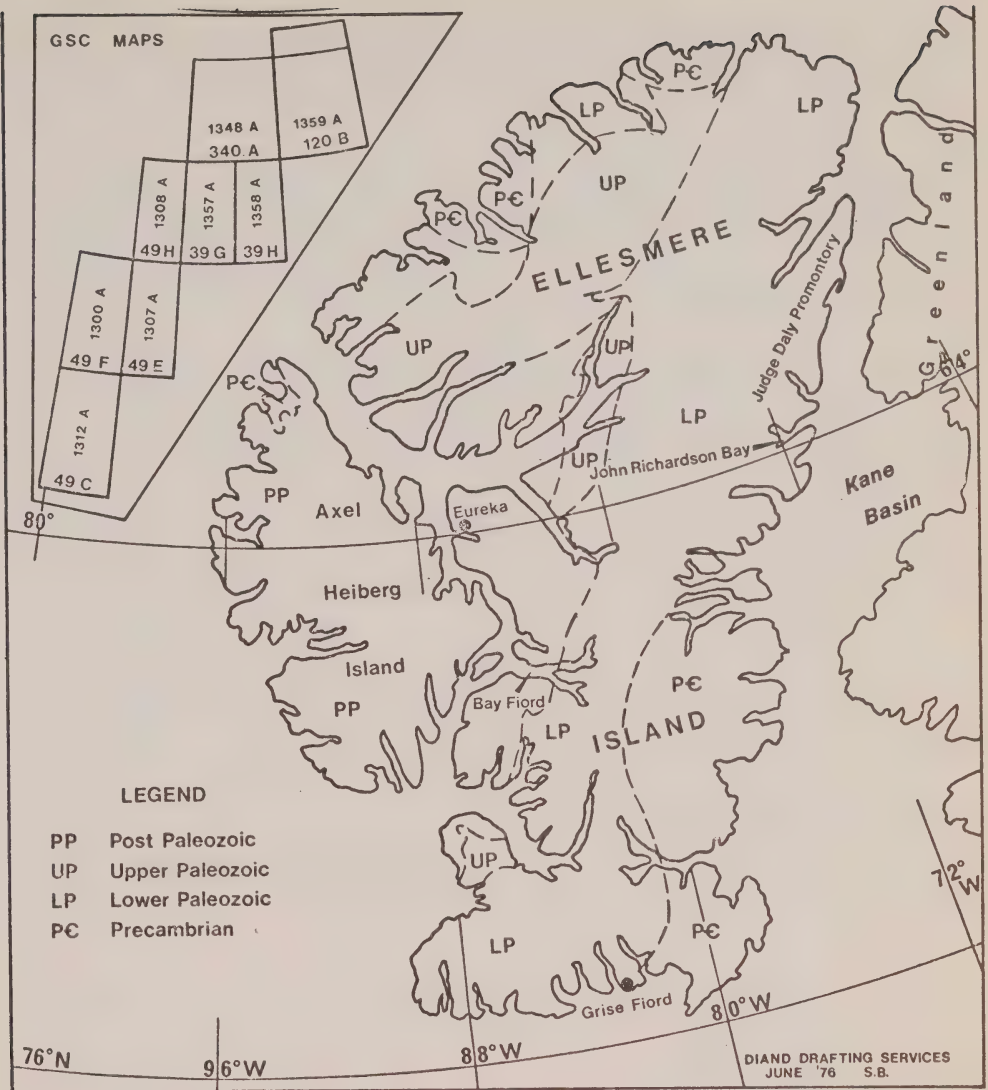
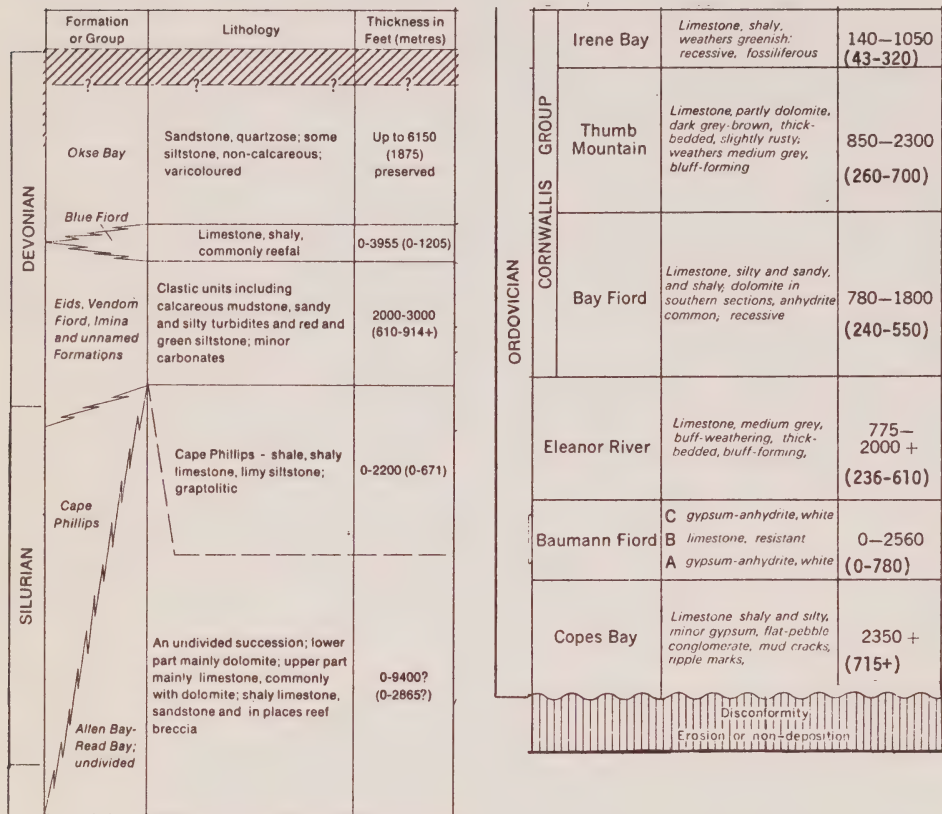


FIGURE 14. SIMPLIFIED GEOLOGY OF ELLESMERE ISLAND.

(Geological Survey of Canada maps are shown in inset and listed below)

MAP	AREA NAME	NTS	AUTHOR(S)
1300A	Eureka Sound	49 F	Thorsteinsson, 1972a
1307	Strathcona Fiord	49 E	Thorsteinsson, 1972b
1308	Canon Fiord	49 H	Thorsteinsson, 1972c
1348	Greely Fiord East	340 A	Thorsteinsson and Kerr, 1972
1357	Sawyer Bay	39 G	Kerr, 1972a
1358	Dobbin Bay	39 H	Kerr, 1972b
1359	Kennedy Channel and Lady Franklin Bay	120 B	Kerr, 1972c

TABLE VII
COMPOSITE STRATIGRAPHIC SECTION, CENTRAL FRANKLIN MIOGEOSYNCLINE
(after Kerr, 1968, 1976b)



ELLESMERE EXPLORATION PROGRAM
Kapvik Exploration Ltd.
904, 675 Hastings Street
Vancouver, B.C. V6B 1N2

39 G, H
49 A-H
120 B
340 A

REFERENCES

Kerr (1967, 1968, 1972a, 1972b, 1972c, 1975a, 1976a, 1976b); Thorsteinsson (1972a, 1972b, 1972c); Thorsteinsson and Kerr (1972).

PROPERTY

None

LOCATION

About 10,000 square miles of the Franklin Miogeosyncline on Ellesmere Island, between Grise Fiord and Judge Daly Promontory (Fig. 14) were explored from base camps located at Irene Bay, John Richardson Bay and Grise Fiord.

HISTORY

Parts of Ellesmere Island were covered during 1973 by soil and stream sediment sampling and prospecting mainly for lead and zinc deposits in carbonate rocks.

DESCRIPTION

The stratigraphy of central and eastern Ellesmere Island is described in detail by Kerr (1967, 1968, 1976b) (Table VII). The Polaris deposit on Little Cornwallis Island and many other showings in the vicinity of Cornwallis Island are in the Thumb Mountain Formation. The Bay Fiord area of Ellesmere Island contains the type sections of the three formations comprising the Cornwallis Group (Kerr, 1968) including the Thumb Mountain Formation which is widespread in the region, but some of the criteria associated with Cornwallis area showings (Kerr, 1975a, 1976b), most notably those related to development of the Cornwallis Fold Belt, are absent.

CURRENT WORK AND RESULTS

Carbonate formations of Silurian, Ordovician and Cambrian age, exposed along the southeast edge of the Cape Phillips shale basin, were investigated. These included the Read Bay, Allen Bay, Irene Bay, Thumb Mountain, Bay Fiord, Eleanor River, Copes Bay, Parrish Glacier and Scoresby Bay Formations.

Prospecting, soil and stream sediment sampling in 1973 and 1974 located several occurrences of lead-zinc and extensive exposures of favourable host rocks were examined. Exploration was discontinued in 1974 because prospects with economic potential were not located.

PROSPECTING PERMITS 313 AND 314, LUMP CLAIMS	Lead, Zinc
Great Plains Development Co. of Canada, Ltd.	120 C/7 (E 1/2)
715 - 5 Avenue, S.W.	120 C/8 (W 1/2)
Calgary, Alberta	81°22'N, 66°W

REFERENCES

Christie (1964, 1974).

PROPERTY

Prospecting Permit 313	120 C/7 (E 1/2)
Prospecting Permit 314	120 C/8 (W 1/2)
LUMP 1-8	120 C/3

LOCATION

The prospecting permits are on the northeastern end of Judge Daly Promontory, northeastern Ellesmere Island (Fig. 15), and the LUMP group is

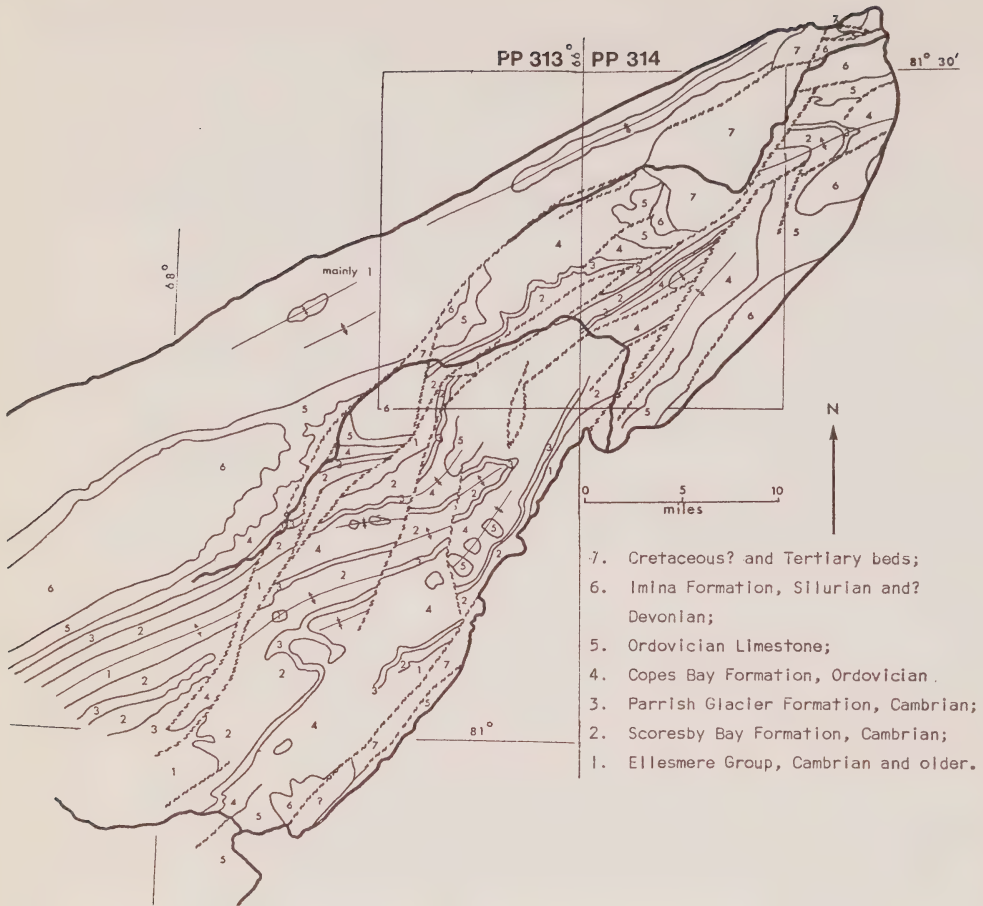


FIGURE 15. GEOLOGICAL SKETCH MAP OF NORTHWESTERN JUDGE DALY PROMONTORY SHOWING GREAT PLAINS PROSPECTING PERMITS

(from Christie, 1975)

35 miles to the southwest, 7 miles south of Bulleys Lump.

HISTORY

Judge Daly Promontory was mapped in 1972 and 1973 by Dr. U. Mayr of J.C. Sproule and Associates for Great Plains Development Company of Canada Ltd. During 1973 geologists from the Great Plains mineral exploration department were attached to the field crew. During the latter part of 1973 lead-zinc showings were located.

DESCRIPTION

Judge Daly Promontory is largely underlain by lower Paleozoic sediments (Christie, 1964, 1974) (Fig. 15). The main showing on the permits

has a strike length of nearly 1000 feet. The best mineralization is mainly light buff to dark red-brown sphalerite as coarse grained disseminated crystals and irregular sub-horizontal lenses in a light grey dolomite which contains lenses and veinlets of white sparry calcite. Coarse grained galena forms 3 to 4 inch wide bands of crystals that are as much as one inch in diameter. Galena and minor pyrite are also disseminated with the more abundant sphalerite. Wavy stylolite-like surfaces coated with carbonaceous material are characteristic of the mineralized zone.

The Copes Bay Formation, which contains the mineralization, is believed to have formed in a tidal flat-algal mat environment.

CURRENT WORK AND RESULTS

In the summer of 1974, a crew of up to 14 prospected, mapped and geochemically sampled the permit areas, and a gravity survey, trenching and sampling tested the main showing. In 1976, 130 JUD claims were staked in the west central part of the permit area on ground underlain by the Copes Bay Formation. The LUMP claims, staked in 1974 on lead-zinc mineralization in scree, lapsed in 1976.

SOMERSET ISLAND KIMBERLITE DISTRICT

Exploration for kimberlite in 1974 was centered on Somerset Island (Fig. 16A).

All known kimberlites are on the eastern flank of the Boothia Uplift (Kerr and Christie, 1965) and intrude rocks as young as late Silurian Read Bay Formation. Mitchell (1975, 1976) suggests that intrusion is controlled by a northeast trending fracture system rather than the predominant northerly structures related to the Boothia Uplift.

During 1974 Diapros Ltd. staked several new discoveries, constructed a small mill near Batty Creek and processed over 200 tons of kimberlite.

KIMBERLITE PROJECT
Diapros Canada Ltd.
Box 28
Toronto-Dominion Centre
Toronto, Ontario

Diamond
58 C/3, 8, 9
58 D/5, 11, 12
Somerset Island

REFERENCES

Blackadar (1967); Blackadar and Christie (1963); Brown *et al.* (1969); Clarke and Mitchell (1975); Kerr and Christie (1965); Mitchell (1975, 1976); Mitchell and Clarke (1976); Mitchell and Fritz (1973).

PROPERTY

DIAPROS 1-6
BAT 1-5, BATTY 1-31
ELWIN 1-10
QUEST 1-5, JOS 1-2, NORD 1-31
ZEPHYR 1-2, HAM 1-9

58 C/3
58 D/5, 58 C/8
58 D/11, 12
58 C/8
58 C/9

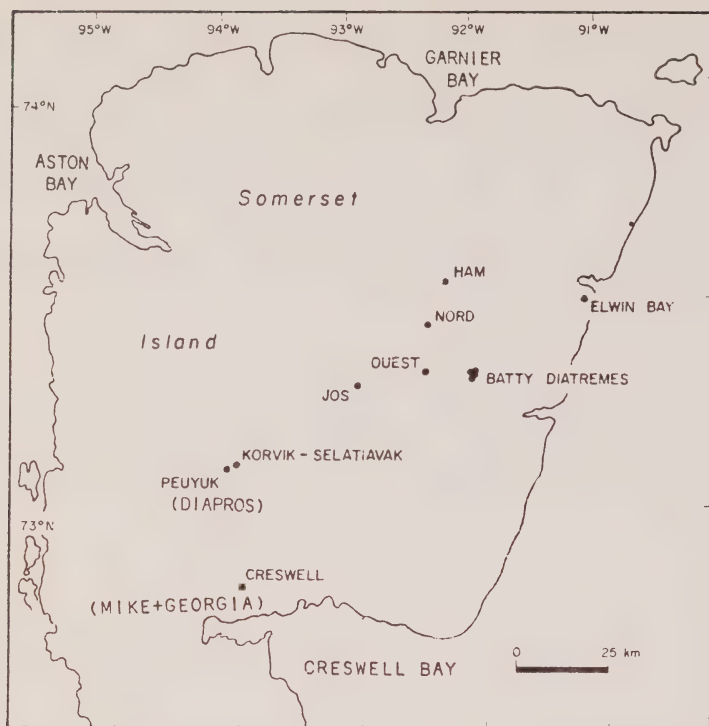


Figure 16A. Location of Somerset Island Kimberlites
(from Mitchell, 1975)

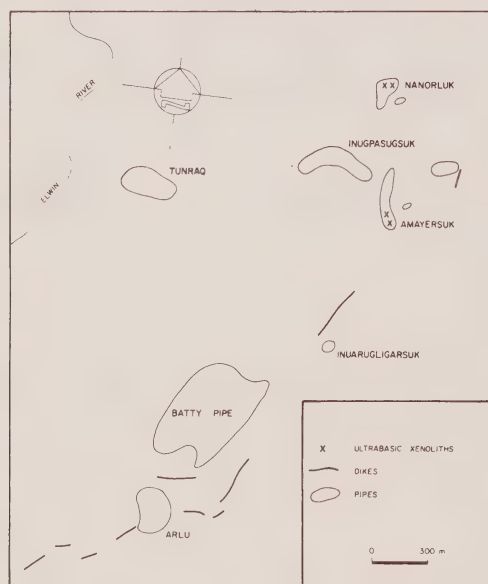


Figure 16B. Map of the BATTY Kimberlites
(from Mitchell, 1975, cf. Figure 17)



100 M.

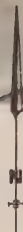


FIGURE 17. AIR PHOTOGRAPH OF THE BATTY KIMBERLITE
(Enlargement of NAPL photo A16331-80)

LOCATION

All of the claims are on Somerset Island. All known kimberlite intrusions on Somerset Island are located on Figure 16A.

HISTORY

The diatreme on the DIAPROS group is shown as a 'basic intrusion' on published maps (Blackadar and Christie, 1963; Blackadar, 1967). It was mapped, sampled and recognized as kimberlite during a geological survey of Somerset Island by J.C. Sproule and Associates in 1970, and described by Mitchell and Fritz (1973).

The 6 DIAPROS claims were staked in April 1973, following publication of this paper. Later that summer samples of the kimberlite and stream samples were collected and sent to South Africa for analysis and the Batty and Elwin occurrences were discovered and staked.

DESCRIPTION

The belt of Precambrian gneisses along the west coast of Somerset Island at the core of the Boothia Arch (Kerr and Christie, 1965; Brown *et al.*, 1969) is a dominant geological feature of the island. The remainder of the island is mainly covered by gently dipping lower Paleozoic sediments, predominantly carbonates (Blackadar, 1967).

Kimberlite pipes cutting the lower Paleozoic sediments appear as distinctive dark coloured patches on air photographs as in Figure 17 which shows the Batty diatreme and dikes. The pipes are slightly more resistant to erosion than the surrounding rocks and exhibit a low positive topography covered with a regolith of locally derived relatively unweathered frost shattered kimberlite. Small bedrock exposures are found mainly in the walls of small stream channels.

The petrology and mineralogy of some of the Somerset Island kimberlites are described in detail by Mitchell and Fritz (1973), Mitchell (1975, 1976), Clarke and Mitchell (1975) and Mitchell and Clarke (1976). There is some variation from pipe to pipe and even within pipes, some of which are actually multiple intrusions. Olivine, phlogopite and garnet phenocrysts are usually present and easily identifiable; the latter are commonly surrounded by 1-2 mm. thick kelyphitic rims. Magnetite, pyroxene, perovskite, ilmenite and carbonate may also be present.

The kimberlites on Somerset Island (Fig. 16) range from less than 100 feet to more than 2300 feet in diameter for the main Batty pipe (Fig. 16B and 17). Other kimberlites occur as dikes. Mitchell (1976) briefly describes the geology of these kimberlites.

The Somerset Island intrusions contain rounded xenoliths of Paleozoic country rock and rounded phenocrysts which together with the lack of contact metamorphism suggest emplacement by a fluidization process.

CURRENT WORK AND ACTIVITIES

Several kimberlites were identified, staked and sampled during continuing reconnaissance. A mill designed to produce heavy mineral concentrates was constructed and operated on the BATTY group. Concentrates from the mill were shipped to laboratories in South Africa. A total of 414 tons of kimberlite from the 6 claim blocks were treated and a few small diamonds

recovered. The results are discouraging, consequently the Somerset Island program will be greatly reduced.

KIMBERLITE PROJECT
Cominco Ltd.
Suite 1700
120 Adelaide Street, W.
Toronto, Ontario M5H 1T1

58 C/3
58 B/14, 15

REFERENCES

Clarke and Mitchell (1975); Mitchell and Fritz (1973); Mitchell (1975); Mitchell and Clarke (1976).

PROPERTY

SELATIAVAK 1-6
GEORGIA 1-9
MIKE 1-16

58 C/3 (73°08'N, 94°07'W)
58 B/15 (72°51'N, 93°58'W)
58 B/14 (72°50'N, 94°05'W)

LOCATION

The SELATIAVAK claims are on south-central Somerset Island, between the Aston and West Creswell Rivers about 25 miles north of Creswell Bay (Fig. 16A). The MIKE and GEORGIA claims are 5 miles north of the west end of Creswell Bay.

HISTORY

The SELATIAVAK claims, about one mile east of the DIAPROS group, were staked in July and September 1973 to cover the small Selatiavak and Korvik kimberlite diatremes of Mitchell (1975).

The MIKE and GEORGIA groups were staked on the Creswell kimberlites in August 1973.

DESCRIPTION

The geological setting of the Selatiavak and Korvik kimberlites is similar to that of the kimberlites on the DIAPROS claims, and is described in some detail by Mitchell (1975).

In contrast to other kimberlites on Somerset Island, the Creswell kimberlites are a pale green colour, due to extensive alteration. They contain non-magnetic iron oxides and have no magnetic expression, therefore are very difficult to find.

CURRENT WORK AND ACTIVITIES

Geological and magnetometer surveys tested the SELATIAVAK claims in 1973 (Mitchell, 1975), and the MIKE and GEORGIA groups in 1974, at which time 10-20 pound samples were collected from all three claim groups to determine their heavy mineral content.

MACKENZIE REGION

During 1974 the Mackenzie District Geologist's Region encompassed the central part of the Northwest Territories (Fig. 1, p. 2). It extended from the 60th parallel to the Arctic coast and west from approximately 102° to a line joining 120° west longitude in the south to 130° west longitude at the Arctic coast, an area of nearly 400,000 square miles which is nearly twice as large as the Yukon Territory. Four separate geological provinces are represented in this Region, including all of the Slave Province, most of the Bear Province and large parts of the Churchill Province and of the Interior Platform (Fig. 18).

The bulk of Mackenzie Region exploration in 1974 took place in the Slave Province but important programs continued in the Interior Platform around Pine Point, and near the silver mines in the Bear Province. High grade metamorphic and plutonic rocks of the Churchill Structural Province bordering the Slave-Bear Provinces to the east and southeast are sparsely mineralized and in 1974 only a few projects were executed in the vast area which they underly. These various activities are described in four sub-chapters, one for each of the major subdivisions of the Region.

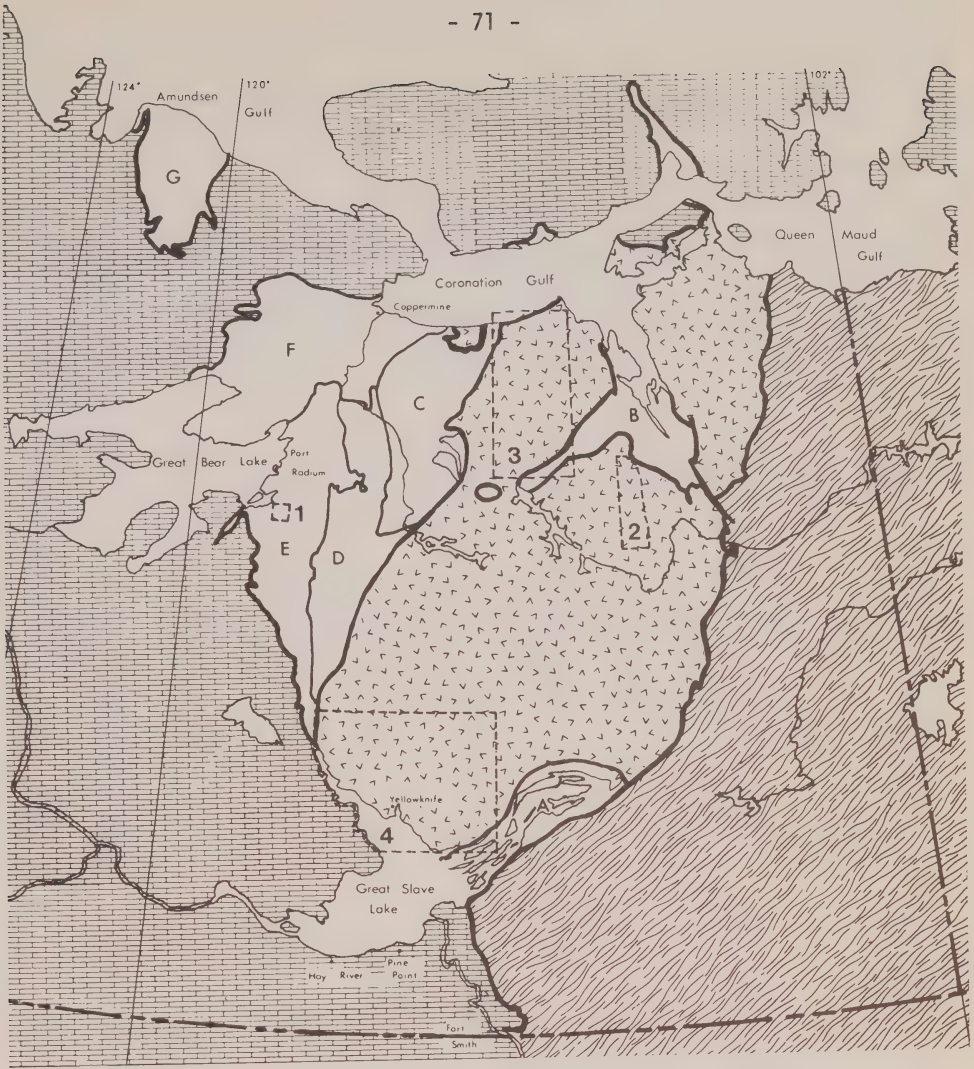
CHURCHILL PROVINCE

There was little activity in the Churchill Province within the Region monitored by the Mackenzie District Geologist (Fig. 1, p. 2 and Fig. 18). A few properties were explored south of the East Arm of Great Slave Lake where targets include uranium in granitic rocks and in the Nonacho Group of supracrustal rocks, and copper and silver in the gneissic complex cut by the McDonald Fault system. The search for nickel continued on the Arctic Coast, near the mouth of the Perry River.

With the exception of the Nonacho Group and related rocks, most of the Churchill Province in the Mackenzie District is a crystalline complex comprised of granitic and gneissic rocks which commonly show evidence of a polymetamorphic history. For most of these granitic rocks the last deformation was mainly fracturing, crushing, and in places, mylonitization. Portions of them may be Archean rocks partly remobilized by Hudsonian metamorphism.

Uranium is associated with granitic rocks and with the Nonacho Group, in most cases, as pitchblende in narrow fillings in fractures and small veinlets in quartz stockworks. Disseminated chalcopyrite is found along some of the splays of the McDonald Fault system and native silver has been recorded as narrow veinlets in mylonitized rocks adjacent to the southern edge of the East Arm Subprovince.

The southern Churchill Province is studded with lakes which permit access by fixed wing aircraft to within reasonable walking distance of most properties. Areas north of the tree line have fewer lakes as much of the country is covered by sand, gravel and till, but large-wheel equipped aircraft can operate in these areas.



LEGEND

 BEAR PROVINCE

- A East Arm Subprovince
- B Kilohigok Basin
- C Epworth Fold Belt
- D Hepburn Metamorphic Belt

- E Great Bear Batholith
- F Amundsen Basin
- G Brook Inlier



INTERIOR AND ARCTIC PLATFORM



CHURCHILL PROVINCE



SLAVE PROVINCE

LARGER SCALE LOCATION MAPS

1 Camsell River District (Figure 19)

2 Hackett-Back Rivers Volcanic Belt (Figure 22)

3 Coronation-James River Area (Figure 21)

4 Southern Slave Gold Area (Figure 20)

FIGURE 18. SKETCH MAP SHOWING GEOLOGICAL PROVINCES IN THE MACKENZIE REGION
Subdivisions of the Bear Province are shown as are areas covered by geologic property location maps.

TOM CLAIMS
Phelps Dodge Corporation of Canada Limited
1106, 55 Yonge Street
Toronto, Ontario

Gold, Silver, Lead
65 D/16
60°55'N, 102°26'W

REFERENCE

Taylor (1963)

PROPERTY

TOM 1-23

LOCATION

The TOM claims are in the District of Mackenzie 7 miles east of the northern tip of Snowbird Lake.

HISTORY

The TOM claims, staked by T. Hamilton in late 1973 and acquired by Phelps Dodge Corporation of Canada Limited in early 1974, cover part of the area staked as the C 1-36 claims in 1957. The C claims lapsed in 1958 and the northeastern part of the area was restaked as the COP 1-18 claims in 1963. Ten of the COP claims lapsed in 1964 and were restaked as the BAB 1-13 claims. The COP and BAB claims, held by Kilgour Gold Mines Limited, lapsed in 1968.

DESCRIPTION

The TOM claims cover part of a north-trending contact between mafic volcanic rocks on the east and gneissic granite and granodiorite on the west (units 2 and 5 respectively, Taylor 1963).

Kilgour Gold Mines Limited explored 3 showings in amphibolite on the COP claims. One showing consists of quartz-carbonate veins in a fracture zone up to 5 feet wide and 130 feet long. Samples from a sulphide rich quartz vein assayed 4.94 oz./ton Au and 3.86 oz./ton Ag. Showing number 2 is a 280 foot long quartz vein containing galena, chalcopyrite, pyrite and sphalerite. The best samples from this vein assayed 3.66 oz./ton Ag, 0.42% Cu, 1.7% Pb and 4.2% Zn over 2.5 feet.

CURRENT WORK AND RESULTS

Magnetometer and EM surveys, totaling 15 and 16 line miles were done on the claims.

LYN, PRN, JA CLAIMS
Cominco Ltd.
200 Granville Square
Vancouver 2, B.C. V6C 2R2

Copper, Nickel
66 M/9
67°30'N, 102°10'W

REFERENCES

Blake (1963); Fraser (1964); Heywood (1961); Laporte (1974a); Padgham *et al.* (1976).

PROPERTY

PRN 1-41, JA 1-40, LYN 1-130

LOCATION

The property is approximately 520 miles northeast of Yellowknife and 120 miles southeast of Cambridge Bay. The camp area used in 1974 is adjacent to a cabin of the Canadian Wildlife Service, on the east bank of the Perry River Estuary, just northeast of the PRN group. It can be reached by float or ski equipped planes, but because of the shallow and tidal nature of the estuary at this point it is a poor landing site.

HISTORY

In 1970 Giant Yellowknife Mines Ltd. and the Dragon Syndicate discovered a train of norite and pyroxenite boulders containing nickel and copper. Assays as high as 1.93% Cu and 2.47% Ni were reported. In 1971 Giant Yellowknife Mines Ltd. acquired 7 Prospecting Permits covering 66 L/9, 10, 16, 66 M/1, 8, 9 and 66 N/12.

Airborne geophysical surveys were flown and followed up on the ground in 1971. In 1972 several conductors were drilled. The source of the mineralized boulders at the mouth of the Perry River was not found, and the ground was allowed to lapse.

Perry River Nickel Mines Ltd. staked the PRN and JA claims in early 1973 and the LYN claims a year later. In 1973 geological mapping was done on the PRN claims, and reconnaissance IP, EM and magnetometer surveys on the PRN and JA groups. The property was optioned by Cominco in the spring of 1974.

DESCRIPTION

Archean granitic to granodioritic gneisses with bands of iron formation, mafic gneiss and gabbro underlying the claims, have gneissic layering trending east to east-northeast and dipping gently to the south. North-northwest trending norite and diabase dikes intrude the gneisses. Only one dike is wholly exposed across its width of 175 to 200 feet. It can be traced for one mile beyond the PRN group boundary.

Norite mineralized with chalcopyrite, pyrrhotite, violarite, pentlandite, magnetite and pyrite is found in a 2 mile long boulder train and locally in exposures of norite dikes. Chalcopyrite is evenly distributed through the norite boulders in fine stringers, fracture fillings and small patches, while pyrrhotite is commonly found in more massive pods. Twenty-eight samples of mineralized boulders averaged 0.5% Cu and 1.25% Ni. Grab samples from the norite dikes assayed 0.13%, 0.02% and 0.16% Ni, and 0.07%, 0.18% and 0.22% Cu.

CURRENT WORK AND RESULTS

To delineate a possible source of mineralized boulders on Winter Island and in the Perry River Delta the geology of the PRN, LYN and JA claims were mapped on half mile to the inch scale and various parts of the LYN and PRN groups were surveyed with geophysical instruments. The types of survey and the line miles done on each claim group are listed on the following page.

<u>Claim Group</u>	<u>Magnetometer</u>	<u>EM (200' coil separation)</u>	<u>EM (400 coil)</u>	<u>Gravity</u>
PRN	9.51 mls	1.21 mI	.72 mI	1.10 mI
LYN	30.57 mls	3.03 mI	.72 mI	.72 mI

A drilling target was defined.

KIANLA CLAIMS

Enex Resources Ltd.

1700, 10024 Jasper Avenue

Edmonton, Alberta T5J 1R9

Uranium

75 C/13

60°59'N, 109°46'W

REFERENCES

Hornbrook *et al.* (1976); Mulligan and Taylor (1969).

PROPERTY

KIANLA 1-19

LOCATION

The claims lie on the southwest side of Target Lake, 95 miles north-east of Fort Smith and 185 miles southeast of Yellowknife.

HISTORY

Mineral claims KIANLA 1-19 were staked for W.W. Kizan in 1974. They partly cover ground previously staked as AJ 1-15 by A. Larocque in 1970.

In 1974 Trigg, Woollett and Associates assessed the claims for Enex Resources under an agreement with the owner.

DESCRIPTION

The claims are underlain by granitic gneiss and minor amphibolite. Small irregular patches and lens shaped bodies of granite and pegmatite occur in the gneisses.

Foliation in the gneiss trends northeasterly and dips 60° to vertical. A northwest trending valley is interpreted as a fault trace because on either side rocks show hematitic alteration, brecciation, tension fractures and slickensides.

CURRENT WORK AND RESULTS

In 1974 the claims were explored by ground radiometric survey with geological mapping, detailed radiometric surveying, trenching and sampling on the best occurrences. Two grids, 700 feet apart along a valley trending 300° were explored in detail, and 26 bog samples were collected near radioactive anomalies.

Seven radioactive occurrences were located on one grid but none appeared to have much depth or lateral extent. One showing is in vuggy hematitic granite, the other 6 in weakly to moderately foliated biotite gneiss which contains pyrite. The second grid also has 7 occurrences, all in

narrow, discontinuous hematitic fractures in granite gneiss and pyrite bearing biotite gneiss. Minor yellow oxides and traces of sooty pitchblende were noted in talus beneath some of these showings.

The best assay obtained from the second grid was 0.019% U from a chip sample representing 2.0 feet. No assays are reported from the other grid. A chip sample from a location between the 2 grids assayed 0.75% U across a width of 2.5 feet.

Radioactive anomalies have been recorded on pegmatite lenses in granite and gneiss but apparently all the assays and most if not all trenching was on narrow fractures with hematitic and limonitic stains. These are mainly in gneiss and are apparently related to northwesterly striking faults.

BM CLAIMS
Shell Canada Ltd.
1027 - 8 Avenue, S.W.
Box 100
Calgary, Alberta T2P 2H5

Uranium
75 E/8
61°20'N, 110°10'W

REFERENCES

Darnley and Grasty (1972); Henderson (1939).

PROPERTY

BM 1-36

LOCATION

The claims lie on the east side of McInnes Lake, approximately 160 miles southeast of Yellowknife and 110 miles northeast of Fort Smith.

HISTORY

Claim BM 1 was recorded in 1971, and claims BM 2-36 in 1974. The claims were optioned to Consolidated Shunsby Mines Ltd. from whom Shell Canada Ltd. later acquired exploration rights.

A gamma ray spectrometer survey was flown over the area by the Geological Survey of Canada in 1970 (Darnley and Grasty 1970).

DESCRIPTION

The claim block is underlain by isoclinally-folded, northeast trending, late Aphebian sediments of the Nonacho Group. The basal conglomerate of the Nonacho Group consists mainly of quartz pebbles in an arkosic matrix. Locally it contains lenses of arkose.

Pitchblende occurs in narrow shear zones and with calcite and hematite in the conglomerate matrix on BM 1 and BM 16 in the center of the claim group. Disseminated pyrite with minor amounts of gold is locally present.

CURRENT WORK AND RESULTS

An airborne radiometric and magnetometer survey of a 6.2 by 4.8 mile

area on lines one-eighth of a mile apart located 2 uranium and 4 thorium anomalies within the Nonacho Group near the granite-sediment contact. Ground scintillometer surveys, sampling of pre-existing trenches, and geological mapping of a 1000 X 1000 foot square grid tested the uranium showing on claims BM 1 and 16. Anomalies with high thorium to uranium ratios outside the grid were tested by scintillometer.

BEN CLAIMS, MG CLAIMS
Imperial Oil Ltd.
111 St. Clair Avenue, W.
Toronto, Ontario M4V 1N5

Uranium
75 F/13
61°53'N, 109°48'W

REFERENCES

Hornbrook et al. (1976); McGlynn (1971); Taylor (1971).

PROPERTY

BEN 1-6, MG 1-2

LOCATION

The BEN claims are at Ben Lake, 155 miles southeast of Yellowknife and 145 miles from Fort Smith. The MG claims are at a small lake a quarter mile from Nonacho Lake and 2.5 miles southeast of the BEN claims.

HISTORY

Uranium mineralization was discovered in the area in 1968, and BEN 1-6 were staked and prospected, but they lapsed in 1969. The showings were restaked in 1974 for Imperial Oil Ltd.

Radioactive occurrences known on the MG claims for several years were explored by prospecting and trenching in 1971. Claims MG 1-2 were staked in 1974 and transferred to Imperial Oil Ltd.

DESCRIPTION

On the BEN claims pitchblende and yellow uranium oxides are reported to fill fractures in the late Aphebian northeast striking Nonacho Group sediments that consist of conglomerate, slate, greywacke, arkose and sandstone. The locally sheared basal conglomerate of the Nonacho Group lies on an Archean basement of granite, granodiorite, quartz diorite and gneisses.

The MG claims are underlain by late Aphebian Nonacho Group sediments.

CURRENT WORK AND RESULTS

In 1974 a 139 line mile airborne spectrometer survey detected one weak anomaly in the 70 square miles covered which included the BEN and MG claims. Lake sediment sampling on a grid spacing of 2 X 2 miles found that 3 lakes underlain by Archean granite were geochemically anomalous. The lake sediment geochemistry gave no indication of the radioactive showings reported on the BEN group.

UR AND EAGLE CLAIMS
C. Weyrowitz, G. Michalow
Uranium City, Saskatchewan

85 H/9
61°40'N, 112°13'W

REFERENCES

Hoffman *et al.* (1977a, 1977b); Reinhardt (1969).

PROPERTY

UR 1-13, EAGLE 1-5, 8

LOCATION

The UR and EAGLE groups are 85 miles southeasterly of Yellowknife on the south shore of Great Slave Lake, on Hornby Channel, the southernmost entrance to the East Arm. The properties lie 16 miles east of the mouth of the Thubun River.

HISTORY

The UR claims were first staked in 1970 by G. Michalow. A number of pits and trenches have been excavated on uranium showings on this group and on adjacent HL claims, staked in 1966, and EAGLE claims, staked by G. Weyrowitz in 1967. The EAGLE claims were transferred to Montreal Trust Co. in 1970, and were acquired by G. Michalow in 1972.

DESCRIPTION

Narrow pitchblende stringers fill cross fractures in mylonitic zones, none of which are more than 4 feet wide and 6 to 12 feet long. The country rocks are intensely cataclased high grade gneisses and granites.

CURRENT WORK AND RESULTS

In 1974, 5 trenches were drilled and blasted into the bedrock on UR 1.

Four pits were excavated on the EAGLE claims.

BEV CLAIMS
Nor-Can Minerals Ltd.
10534 - 109 Street
Edmonton, Alberta

Copper, Silver
85 H/10
61°30'N, 112°35'W

REFERENCES

Lord (1941); Padgham *et al.* (1976); Padgham, Kennedy *et al.* (1975); Reinhardt (1969); Stockwell (1936); Thorpe (1972a).

PROPERTY

BEV 1-3, 14, 15, 23, 24, 91-97, 99

LOCATION

The BEV claims lie on the south shore of Great Slave Lake at the mouth of the Thubun River, 88 miles southeast of Yellowknife, and 110 miles east-northeasterly of Hay River.

HISTORY

A part of the BEV claims was once covered by the MGB claims, but records of work are not available.

In 1948 a large claim group was staked in the area by C.C. Bevan to cover radioactive anomalies but when it became apparent that these were caused by disseminated thorium in the granitic rocks the claims were allowed to lapse.

The ground was restaked as the BC, BELL, BEV and GONE claims between 1964 and 1969, and transferred to Bevco Mines Ltd. in 1970, and then to Nor-Can Minerals Ltd. in 1972. Between 1966 and 1969 trenching and diamond drilling tested the main copper showing on BEV 96 and 99, and helicopter borne magnetic, ground EM and geological mapping at one inch to 500 feet covered the southeast claim blocks. In 1969, 1500 feet of drilling in 11 holes tested the CB claims about 2 miles to the southeast. BEV 1-3 were geologically mapped at one inch to 400 feet in 1973.

DESCRIPTION

The BEV claims are underlain by migmatite, granite and aplite, minor granulite and a basic rock that is probably amphibolite. A northeast trending zone of mylonite lies south of the Thubun River, and granitic meta-sediments, mixed metasediments and gabbro lie north of the river. Reinhardt (1969) shows a zone of migmatite on line of strike to the northeast.

The main showing is on BEV 96 and 99, 2000 feet north of the Eagle Showing on BEV 92 and 93. There is a third showing on BEV 14. These showings strike northeast, east and northwest respectively. The mineralization consists mainly of chalcopyrite, with minor fluorite, barite and galena.

The North Eagle Showing contains subeconomic copper mineralization in easterly striking calcite-quartz veinlets spaced from one inch to one foot apart. Extension of the North Eagle mineralization southward under the muskeg is possible. This showing may be related to an extensive Klyceptor EM anomaly, which at its northeast end has a trench reportedly assaying 1.52% Cu and 20 oz./ton of Ag over 16 feet.

CURRENT WORK AND RESULTS

A 402 foot hole drilled on BEV 94 intersected interlayered migmatite and mafic rock. The migmatite consists mainly of granitic material with mafic lenses. Shear zones, cut at 111 and 246 feet, contained quartz-barite and chlorite-calcite respectively.

Semi-quantitative spectrographic analyses were submitted for 16 elements in samples of shear zone material intersected at 111 feet, together with similar results for 5 separate samples of material obtained from trenches. Assays for gold, silver and copper on the same samples indicated trace to 0.1 oz./ton Ag and 0.10 to 0.32% Cu. One surface sample returned 0.3 oz./ton Ag and 5.17% Cu.

BEAR PROVINCE

The Bear Structural Province (Fig. 18) formed from the infilling of the circum-Slave Coronation Geosyncline. Large portions of it were metamorphosed in the mid-Proterozoic. Other portions have been very little metamorphosed although folding may be widespread and locally intense. The Province can be subdivided into various distinctive sub-provinces including the Kilohigok Basin, filled with Goulburn sediments (Campbell and Cecille 1975) and the Great Slave Basin or Athapuscow Aulocogen (Hoffman 1973) which is filled with dominantly sedimentary rocks that form the East Arm Subprovince. A much larger area lying west of the Slave Province forms the bulk of the Bear Province. It consists of 4 parts which are from east to west the Epworth Fold Belt, Hepburn Metamorphic Belt, Great Bear Batholith and the supracrustal succession in the Amundsen Basin (Fraser *et al.* 1972). The main exploration targets in the Bear Province are silver veins in volcanic units within the Great Bear Batholith and fracture controlled uranium deposits in the Great Bear Batholith and in the southern part of the Amundsen Basin. In the East Arm Subprovince copper, silver, nickel-cobalt, lead-zinc, uranium and barite have been targets in recent years.

In 1974 three parts of the Bear Province were explored. These, the East Arm Subprovince, in the south, the Great Bear Batholith in the west, and the Amundsen Basin in the northwest, are described in the following sections.

EAST ARM SUBPROVINCE

The East Arm Subprovince (Fig. 18) is underlain by an assemblage of relatively unmetamorphosed and variably deformed supracrustal rocks, mainly of sedimentary origin. Mapping during the summer of 1976 will provide the basis for a new set of more detailed geological maps of the Subprovince, Hoffman *et al.* (1977b).

A wide variety of mineral deposits occur throughout the East Arm but few have been found that are rich enough or large enough to warrant mining. Deposits of uranium, copper, lead-zinc, barite and nickel-cobalt, the latter being the only producers, are scattered throughout the region. There was little exploration in the area during 1974, only 3 properties were explored during the year.

Nearly all parts of the Subprovince are accessible to bush aircraft and most of it is within a few miles of Great Slave Lake which is serviced by tug-barge transport.

A 4500 foot private gravel airstrip at Plummer's Lodge near Talthei-lei Narrows can handle small jet aircraft. A rough 2300 foot strip at Snowdrift is used by Twin Otters except during the summer when the village is supplied by float aircraft.

TAT GROUP
W. Brinsa
Box 713
Yellowknife, N.W.T.
XOE 1HO

75 K/11
62°43'N 109°10'W

REFERENCES

Hoffman *et al.* (1977a, 1977b).

PROPERTY

TAT 1-4, 6-8

LOCATION

The TAT claims are on Fairchild Point near Reliance at the east end of Great Slave Lake. They cover a promontory between McLeod Bay, on the north and Police Bay on the south.

HISTORY

Claims have been held on the Fairchild Point copper occurrences since the 1950's. The TAT claims are a restaking by W. Brinsa of the BOX claims, which had been mapped for Consolidated Mining and Smelting. Giant Gold Mines Ltd. examined, mapped and assessed the TAT group in 1967.

DESCRIPTION

The TAT claims are underlain by sediments of the Kahochella and Sosan Groups which are separated by the Murry Fault. Quartz carbonate stockworks with minor chalcopyrite are confined to the micaceous red sandstone of the Sosan Group. The best assays reported are 50 averaging 0.43% Cu in trench No. 5.

A northeast-striking fault breccia-quartz stockwork has been traced for 2500 feet across TAT 1 and 3.

CURRENT WORK AND RESULTS

Trenches 60 X 3 X 3 and 135 X 2 X 3 feet were blasted on the TAT claims during 1974. Unfortunately no new assays were submitted.

KEN CLAIMS
Rayrock Mines Ltd.
Suite 1011
2200 Yonge Street
Toronto, Ontario M4S 2C6

Lead, Silver, Gold
75 L/4
62°01'N, 111°58'W

Delta North Exploration and Mining Ltd.
Yellowknife, N.W.T. X0E 1H0

REFERENCES

Hoffman (1968); Stockwell (1936); Stockwell *et al.* (1968).

PROPERTY

KEN 1, 10, 19

LOCATION

The KEN claims are on Keith Island in the East Arm of Great Slave Lake, 80 miles southeast of Yellowknife.

HISTORY

The property was staked in 1945 for Cominco, and restaked in 1959 as the JIM group. No work was reported, though there is some old drill core on the property. The prospect was restaked as the KEN group in 1969, after which all but KEN 1 and 2 lapsed.

Claims KEN 3-20 were staked in 1974 and transferred that year, together with KEN 1 and 2, to Delta North Exploration.

DESCRIPTION

According to various unpublished reports, galena occurs at an andesite-rhyolite contact. Current drill logs show the mineralization in rock described as red trachyte, which overlies agglomerate. A petrographic analysis of drill core for the Department of Indian Affairs and Northern Development by S. Leggett in 1975 describes all rocks examined including those logged as trachyte, agglomerate, agglomerate-andesite and rhyolite as andesite, or as derived from andesite. Rhyolite was noted only in hole K-4, 60 feet stratigraphically above the mineralized zone.

CURRENT WORK AND RESULTS

EM, conductivity and magnetometer tests made over the main zone in May by Delta North showed that the pyrite-galena mineralization was conductive. An IP survey over the mineralized zone was suggested. The claims were transferred to Rayrock Mines immediately after the geophysical exploration.

Rayrock drilled 6 holes totaling 924 feet, 5 on the Central Zone and the sixth, hole K-6, on the west zone about 600 feet to the southwest. Hole K-5 was suspended at 27 feet.

The best values reported are 2.5% Pb over a core length of 31.5 feet in hole K-3, and 2.2% Pb over 18 feet in hole K-6. Silver values of less than 0.5 oz./ton and gold values of less than 0.05 oz./ton accompany the lead mineralization.

PEGGY K CLAIMS
Inland Cement Industries Ltd.
P.O. Box 3961
Station "D"
Edmonton, Alberta

Barite
75 L/7
62°22'N, 110°51'W

REFERENCES

Barnes (1951); Hoffman (1968); Stockwell (1936); Stockwell *et al.* (1968).

PROPERTY

PEGGY K 1-4

LOCATION

The claims are approximately 110 miles east of Yellowknife and 5 miles west of Snowdrift, near the shore of Great Slave Lake.

HISTORY

First examined by Barnes in 1951, the barite showing was staked as the MARY 1-4 claims in 1966. Trenching was performed that year, at which time the property was held by Botha Lake Mining Corporation Ltd. It was subsequently reported (Thorpe 1972) under Elgin Petroleum Corporation.

PEGGY K 1 and 2, which cover the showing, were staked in 1971, and PEGGY K 3-7 and 8-17 were added in 1973 and 1974 respectively. All claims were initially transferred to W.W. Kizan, and in 1974 transferred to Genstar Ltd.

DESCRIPTION

Stockwell *et al.* (1968) show Stark Formation overlying Kahochella Formation in the vicinity of the barite vein on the PEGGY K claims with granitic rocks immediately to the south. The stratigraphy of the East Arm of Great Slave Lake has since been revised and the term Kahochella now designates a Group. It is difficult to reconcile the logs of 1974 exactly with published descriptions of any particular Formation of the Kahochella Group or the Stark Formation. The presence of green and red shales is suggestive of the Charlton Bay Formation of the Kahochella Group, whereas the interstratified limestone dolomite and shale are more typical of the Stark Formation. Calcareous concretions rather than limestone or dolomite beds typically occur in the McLeod Bay and Charlton Bay Formations. According to Hoffman (personal communication 1976) the showing is in Stark Formation which here comprise limestone and dolomite beds dipping steeply to the northeast.

CURRENT WORK AND RESULTS

In 1974 Inland Cement Industries Limited tested the barite occurrence over a strike length of 1000 feet with 13 diamond drill holes, totaling 2314 feet. The best intersection was 37% BaSO₄ across a true width of approximately 14 feet.

Rock types intersected in drilling are red and green shales, arkose, limestone and dolomitic limestone.

BBX GROUP	Copper, Cobalt, Nickel
Great Plains Development Company of Canada Ltd.	75 L/12
736 8th Avenue, S.W.	62°35'N, 111°33'W
Calgary, Alberta T2P 1H4	

REFERENCES

Hoffman (1968); McGlynn (1971); Stockwell (1936); Stockwell *et al.* (1968a); Stockwell and Kidd (1932).

PROPERTY

BBX 1-40

LOCATION

The property lies between McLeod Bay and Hearne Channel, just west of Taltheilei Narrows, in the East Arm of Great Slave Lake, 90 miles east of Yellowknife. An airstrip belonging to a fishing lodge on Great Slave Lake is about 2 miles northeast of the main showings at Aristofat Lake.

HISTORY

Before 1949, 3 claim groups were staked on and around showings which were known in 1931. Further staking for McAvoy interests of Yellowknife in 1949 brought the total claims to 61 in 7 groups: these included the BBX, COPPER, PER and JET claims and later the CC, GOODBYE and FLO groups. The property was optioned by Preston East Dome Mines Ltd. in 1956. After geological work and 3000 feet of diamond drilling, the option was dropped in 1957.

The BBX claims were recorded by J.D. Larkin and J. McAvoy in 1970 and the following year geological and geochemical work was done for the BBX Syndicate. The area around the trenched copper-cobalt showing on BBX 2 was explored with an IP survey.

In 1972, 1100 feet of diamond drilling were completed in 7 holes on behalf of Mr. Bruce Rome of Vancouver, B.C. One hole averaged 0.49% Cu over 83 feet.

In 1974 the claims were transferred to Great Plains Development Company of Canada Ltd.

DESCRIPTION

The property is underlain by Aphebian sedimentary rocks of the Sosan and Kahochella Groups. The mineralization is in a breccia pipe cutting the Sosan Group. This pipe may be a vent related to the volcanogenic sediments of the Seton Formation.

Chalcopyrite is the main ore mineral but smaltite has been observed in drill core. Erythrite staining is locally conspicuous, garnierite is sparingly developed. The mineralizations are mainly on the northern part of BBX 2.

CURRENT WORK AND RESULTS

An IP survey in the area of the showings and volcanic vent defined a drill target.

THE GREAT BEAR BATHOLITH

The Great Bear Batholith (Fig. 18) is a narrow belt extending from Fort Rae at the northwest end of Great Slave Lake to the northwest shore of McTavish Arm, on Great Bear Lake. It is dominated by granitic intrusive rocks but has many irregular and rather small belts of feldspar and quartz feldspar porphyries, mostly ignimbrites and airfall tuffs, in the eastern two thirds of the sub-province and a large andesite pile along the western margin.

The main exploration target in the andesites are silver veins which are the source of important production at Echo Bay and Terra, whereas in the rest of the province uranium is the main target. It is found in reddish brown syenitic intrusions, quartz and quartz-carbonate veins, and in small fractures related to faults throughout the remainder of the area. Copper is a secondary target throughout the area, and bismuth is present in important quantities in Camseil River District, which as an area of intense local exploration is treated in a separate subsection below.

ROSE CLAIMS
Crestland Mines Ltd.
1011, 2200 Yonge Street
Toronto, Ontario M4S 2C6

85 N/1
63°08'N, 116°20'W

REFERENCES

Lord (1942); Richardson *et al.* (1973).

PROPERTY

ROSE 1-42

LOCATION

The ROSE claims lie approximately 80 miles northwest of Yellowknife.

HISTORY

The ROSE claims were staked by N.J. Byrne, L.B. Goldsmith and W. Humphries in 1974 to cover uranium showings found by a scintillometer survey in 1969.

DESCRIPTION

The claims are underlain by granitic rocks which are mainly gneissic. Secondary uranium mineralization is widespread, but assays from trencned showings are low. No primary uranium minerals have been identified.

CURRENT WORK AND RESULTS

During 1974 trenching, stripping and prospecting was concentrated in the southern part of the claim group.

HONK CLAIMS
Uranerz Exploration and Mining Ltd.
Suite 1000
540 - 5th Avenue, S.W.
Calgary, Alberta

Uranium
85 N/10
63°33'N, 116°31'W

REFERENCES

Lord (1942); Richardson *et al.* (1973).

PROPERTY

HONK 1-19

LOCATION

The claims lie near Betty Ray Lake, about 100 miles northwesterly of Yellowknife. A winter road from Ray, through Rayrock Mine passes the property.

HISTORY

The claims were staked in 1974 to cover a radiometric anomaly located by an airborne survey. The anomaly is about 4 times background and has a uranium to thorium ratio of approximately 4:1. The area had previously been covered by a Geological Survey radiometric survey flown on lines 5 km. apart (Richardson *et al.* 1973).

DESCRIPTION

Parts of the claim block are underlain by feldspar-porphyry, diorite, altered Snare Group rocks and aplite.

Mineralization mainly in altered Snare rocks, and less abundantly in mafic feldspar porphyry, consists of pyrite, magnetite, hornblende, epidote hematite and gummite stain.

CURRENT WORK AND RESULTS

The regional radiometric survey which located the anomaly covered by HONK 1-19 was flown on meridional lines about one half mile apart.

Parts of HONK 1, 5, 6 and 10 were mapped at 1:1000 scale to investigate the anomaly located by the airborne survey.

SUE, DIANNE CLAIMS
Noranda Exploration Company Ltd.
P.O. Box 1619
Yellowknife, N.W.T.
XOE 1HO

Uranium, Copper
85 N/10, 15
63°45'N, 116°55'W

REFERENCES

Lord (1942); Richardson *et al.* (1973).

PROPERTY

SUE 1-8, DIANNE 1-11

LOCATION

The claims lie 140 miles northwest of Yellowknife.

HISTORY

The SUE-DIANNE claims were staked and optioned to Noranda Exploration Company Ltd. in 1974 by L. Cooke and D. Smith. The claims cover a radioactive anomaly located during an airborne radiometric survey by the Geological Survey of Canada in 1973 (Richardson *et al.* 1973).

DESCRIPTION

Rocks underlying the SUE-DIANNE group that have previously been mapped as feldspar porphyry and feldspar quartz porphyry (Lord 1942) are now thought to be ignimbrites. On the DIANNE group the ignimbrites are intensely hematized and silicified.

Narrow veinlets of pitchblende, locally accompanied by chalcocite, occupy joints and shears in the altered ignimbrite.

CURRENT WORK AND RESULTS

An airborne radiometric survey of an area measuring 5.5 by 4 miles on lines 1000 feet apart was followed by ground radiometric surveys. Anomalous radioactivity located by 1973 airborne work (Richardson *et al.* 1973) was confirmed.

The claims were prospected and the geology mapped.

ART, LEE CLAIMS
Noranda Exploration Company Ltd.
P.O. Box 1619
Yellowknife, N.W.T.
XOE 1H0

Uranium
85 N/15
63°53'N, 116°55'W

REFERENCES

Lord (1942); Richardson *et al.* (1973).

PROPERTY

ART 1-8, LEE 1-12

LOCATION

The claims lie 125 miles northwest of Yellowknife.

HISTORY

The LEE and ART claims were staked in 1974 to cover anomalies located by an airborne combined radiometric and magnetometer survey.

DESCRIPTION

The property is underlain by porphyritic rhyolite ignimbrite intruded by biotite-adamellite granite. The ignimbrite occurs in a belt about 3/4 mile wide extending from near the southern boundary of the LEE-ART claim block to the northern limit of 1974 mapping. Lord (1942) shows the claim area underlain by an irregular belt of feldspar porphyry and quartz porphyry that extends from the south shore of Mazenod Lake and the Marian River nearly to the north edge of 86 N/15.

CURRENT WORK AND RESULTS

The geology of a 5 by 4 mile area surrounding the LEE-ART claims was mapped at a scale of one inch to one half mile. Ground and helicopter spectrometer surveys more closely located the radiometric anomalies previously found by the regional airborne survey. Chalcopyrite, malachite, pitchblende, pyrite and hematite were found in a restricted shear zone and in joints in the ignimbrite. Several narrow pitchblende-hematite veins were found in joints at a second showing.

FXO CLAIMS
Uranerz Exploration and Mining Ltd.
Suite 1000
540 - 5th Avenue, S.W.
Calgary, Alberta

86 C/7
64°17'N, 116°44'W

REFERENCE

Wilson and Lord (1942).

PROPERTY

FXO 1-16

LOCATION

The FXO claims are at DeVries Lake about 145 miles northwest of Yellowknife, and approximately 25 miles north of Betty Ray Lake and the old Rayrock Mine. A winter road passes about 10 miles to the west of the claims.

HISTORY

The claims were staked after an airborne radiometric survey.

DESCRIPTION

DeVries Lake lies about 3 miles west of the northerly striking Wopmay Fault. Undifferentiated Archean and Proterozoic granite rocks and Aphebian Snare Group sediments underlay the DeVries Lake area. The Snare Group sediments, exposed in a roughly circular 4 mile diameter area, are intruded by granitic rocks. Younger feldspar porphyries which also cut the sediments are grey to reddish brown and contain mafic layers which exhibit high radioactivity. Locally pods of magnetite are associated with the high radioactivity.

CURRENT WORK AND RESULTS

Approximately 67 line miles of airborne radiometric surveying located

a uranium anomaly 3.5 times background on which the FX0 claims were staked. Ground scintillometer readings indicate background is 280 cps., with anomalous readings of up to 10,000 cps. on feldspar porphyry that has an aphanitic dark grey matrix.

Elsewhere in the Bear Province some such porphyries are ignimbrites.

HAM CLAIMS
Imperial Oil Ltd.
500 - 6th Avenue, S.W.
Calgary, Alberta

86 C/15
64°47'N, 116°48'W

REFERENCES

McGlynn (1974); Wilson and Lord (1942).

PROPERTY

HAM 1-4

LOCATION

The HAM claims are 175 miles northwest of Yellowknife in the northwest corner of the Hardisty Lake area.

HISTORY

The claims were staked in 1974 to cover an anomaly located during a spectrometer survey flown in June 1974.

DESCRIPTION

The 4 mile geological map of the Hardisty Lake area shows the claim area underlain by undifferentiated granitic rocks (Wilson and Lord 1942). Recent mapping immediately to the north suggests considerably more diversity in the geology of this area (McGlynn 1974).

CURRENT WORK AND RESULTS

The source of the anomaly identified by the regional airborne radio-metric survey was located by more detailed airborne spectrometer surveys, geological mapping and prospecting.

In the course of the mapping by Trigg, Woollett and Associates Ltd. for Imperial Oil Ltd., granite gneiss, mafic gneiss, granite and aplite were recognized on the claim group. These rocks are cut by steeply dipping minor fractures striking parallel or perpendicular to the foliation.

Several radioactive occurrences associated with magnetite lenses are present within granitic host rocks on the claims. The main occurrence is 1100 feet long, and up to 350 feet wide, and contains a number of radioactive magnetite lenses. Individual magnetite lenses may attain a length of 30 feet and a width of 15 feet.

JOE CLAIMS
Nemco Exploration Ltd.
Suite 534
789 West Pender Street
Vancouver, B.C. V6C 1H7

Uranium
86 D/9
64°45'N, 118°10'W

REFERENCES

Henderson (1949); Lord (1951); McGlynn (1971).

PROPERTY

JOE 1-6

LOCATION

The claims are at the north end of Beaverlodge Lake, 200 miles north-west of Yellowknife.

HISTORY

First staked in 1934, the showings, restaked as the CORMAC group (McGlynn 1971), were staked as the JOE claims in 1970 by K. Rasmussen, who transferred them to Nemco Exploration Ltd. in 1971. In 1975 the claims were transferred to New Pyramid Gold Mines Ltd.

DESCRIPTION

Pods of pitchblende mineralization occur in the contact zone between white quartzite and quartz-feldspar porphyry of probable Aphebian age. Similar quartz-feldspar porphyry has been described elsewhere as ignimbrite.

The quartzite forms a well defined ridge and its contact with the quartz feldspar porphyry may be a fault.

CURRENT WORK AND RESULTS

A ground scintillometer survey in 1974 did not locate additional uranium mineralization.

GR CLAIMS
Seaforth Mines Ltd.
Suite 617
789 West Pender Street
Vancouver, B.C. V6C 1H7

Uranium
86 F/16
65°56'N, 116°27'W

REFERENCES

Allan *et al.* (1973); Allan and Cameron *et al.* (1973); Hoffman (1975, 1976); Lord and Parsons (1952); McGlynn (1975, 1976); Richardson *et al.* (1973).

PROPERTY

GR 1-12

LOCATION

The claims are 250 miles north-northwest of Yellowknife.

HISTORY

The GR claims are one of four groups staked by Seaforth Mines in 1973 to cover radioactive anomalies identified by airborne gamma-ray spectrometer survey (Richardson *et al.* 1973). Prospecting on the ground in 1973 located previously unknown uranium showings. The STAG claims, staked by Eldorado Nuclear lay to the north of the GR group on metavolcanic rocks.

The GR group is surrounded by Rio Tinto's RT claims (p. 91).

DESCRIPTION

The claims are underlain by quartz-feldspar porphyry, Snare Group volcanic rocks and granite and allied rocks.

Mineralization is fracture controlled.

CURRENT WORK AND RESULTS

Geological mapping of an area of about 1000 by 1400 feet and ground radiometric prospecting, mainly in the northern part of the claims, explored an anomaly detected by airborne radiometric survey (Richardson *et al.* 1973).

A hematitic and chloritic quartz-feldspar porphyry is host to a radioactive occurrence on claim GR 1. Blasting, excavation and sampling here and at a showing on the GR 14 fraction explored patchy mineralization that gave low uranium assays.

Work in 1973 not reported in the 73 Mineral Industry Report included 3 days of prospecting which found radioactive anomalies in 3 localities, later shown to be pitchblende occurrences. A picked sample from the strongest anomaly returned 0.28% U₃O₈. The host rock is a highly hematized slightly foliated quartz-feldspar porphyry of a distinctive brick red colour. Hematite pitchblende and traces of chalcopyrite are found in fractures and openings.

Fault sets trend northeasterly and northerly across the claims. The 3 strongest radioactive anomalies lie along the walls of a northeasterly trending draw which may be a fault line valley.

RT CLAIMS

Rio Tinto Canadian Exploration Ltd.
Suite 2600
120 Adelaide Street West
Toronto, Ontario M5H 1W5

86 F/15, 16
65°57'N, 116°28'W

REFERENCES

Allan *et al.* (1973); Allan and Cameron *et al.* (1973); Hoffman *et al.* (1976); Lord and Parsons (1952); McGlynn (1975, 1976); Richardson *et al.* (1973).

PROPERTY

RT 1-69

LOCATION

The claims are 252 miles north-northwest of Yellowknife.

HISTORY

The RT claims, which surround Seaforth Mines Ltd.'s GR claims, were staked for Rio Tinto Canadian Exploration Ltd. in 1974.

DESCRIPTION

The claims are underlain by quartz-monzonite, porphyritic granite, quartz porphyry and northwest striking, southwest dipping, undifferentiated volcanics. The youngest rocks are north and northwest striking diabase dikes and northeast striking quartz veins.

CURRENT WORK AND RESULTS

Geological mapping at one inch to 500 feet and scintillometer surveying located areas of slightly higher radioactivity along faults and near the quartz porphyry contact.

PATCH CLAIMS

Cleaver Lake Mines Ltd.
260, 727 Johnson Street
Victoria, B.C. V8W 1M9

Copper
86 K/11
63°31'N, 117°21'W

REFERENCES

Hoffman and Bell (1975); Lord (1951); McGlynn (1971); Thorpe (1972).

PROPERTY

PATCH 1-28

LOCATION

The PATCH group is on the Sloan River, 10 miles east of Hunter Bay on McTavish Arm of Great Bear Lake, some 30 miles north of Port Radium.

HISTORY

Copper showings were discovered in the area by Dominion Explorers in 1931-32 and claims were held by Consolidated Mining and Smelting Ltd. on some of these for many years. There had been a number of restakings until the present 16 PATCH claims (1-7, 9-10, 20-26) were staked by Sam Otto in 1971. They were held by North Star Mines Ltd. of Yellowknife until 1974.

DESCRIPTION

The claims are underlain by granodiorite, quartz monzonite and quartz diorite. A giant quartz vein forms a prominent northeasterly trending ridge across the property. This quartz vein strikes 035° except near Patch Lake where it is a copper bearing stockwork striking 050° along the northwestern shore of the lake. Chalcocite is the main copper mineral, but numerous sulphides have been identified in polished section.

CURRENT WORK AND RESULTS

In 1974 Cleaver Lake Mines staked PATCH 8, 11-16, 19 and 27-29 around the original PATCH 1-7 which are under option to Cleaver Lake. A drilling program is proposed for 1975 to test a copper-bismuth occurrence on the claims.

Work not reported previously included an engineers' evaluation of PATCH 1-7 by Dave Nickerson of Yellowknife, which described the geology and the mineralization exposed in trenches. Erratic but locally high copper values were obtained including 10.21% Cu over 3 feet within a 19-foot section running 2% Cu.

CAMSELL RIVER SILVER DISTRICT

The Camsell River Silver District (Fig. 19), which covers a portion of the Great Bear Batholith that is underlain mainly by Echo Bay-Cameron Bay Group volcanics and sediments, was prospected soon after the 1930 silver discoveries at Port Radium, but successful mining of the Terra and Norex mines is relatively recent. Hoffman and Cecilie (1974) have designated these units (roughly 3 and 4 of Hoffman *et al.* 1976) as the Western Sequence of the Sloan River Volcanics. Silver-bismuth-copper ore at Terra occurs as discontinuous podiform veins of high grade native silver, silver arsenides, sulphides and native bismuth in a gangue of quartz-carbonate-hematite. Chalcopyrite is a minor constituent of the veins and an abundant mineral in calcareous tuffs, which form the Terra copper zone, considered by some investigators to be a volcanogenic sulphide deposit that is much earlier than the epigenetic hydrothermal silver veins (Shegelski 1973). Host rocks include thin bedded tuffaceous volcanoclastics of the Echo Bay series and more massive intermediate to mafic flows of that series. Recent work (Hoffman 1976) confirms the suggestion that the Camsell River volcanics are the fault displaced equivalent of the Echo Bay Group which contains similar deposits miles to the north at Port Radium.

The area is densely treed, fairly rugged and generally has well exposed bedrock. Access and movement is facilitated by numerous interconnected rivers and lakes, and the bays of Great Bear Lake which permit most of the favourable belt to be approached by boat or float equipped aircraft. Barge service across Great Bear Lake can reach Norex and Federated Mines which lie upstream from Terra, just below the first rapids on the Camsell River. A winter road connects Echo Bay and Terra Mines with the Yellowknife highway at Rae.

DC-3 aircraft operate from the gravel airstrip near the Norex Mine, which is connected with Terra by an 8-mile road. An airstrip with similar capacity, recently completed at the Terra Mine site, provides almost direct access to that operation. Claims worked in 1974 and all claims in good standing at that time are shown on a geological map (Fig. 19).

Figure 19. Claims and mines in the Camsell River Silver District (facing).

A Terra Mine	1 ICE	5 ITLDO 10-12
B Federated (Northrim) Mine	2 NEAL-ZAP	6 FR
C Norex Mine	3 MJ	7 MARY
	4 AG & ITLDO 13	8 LB

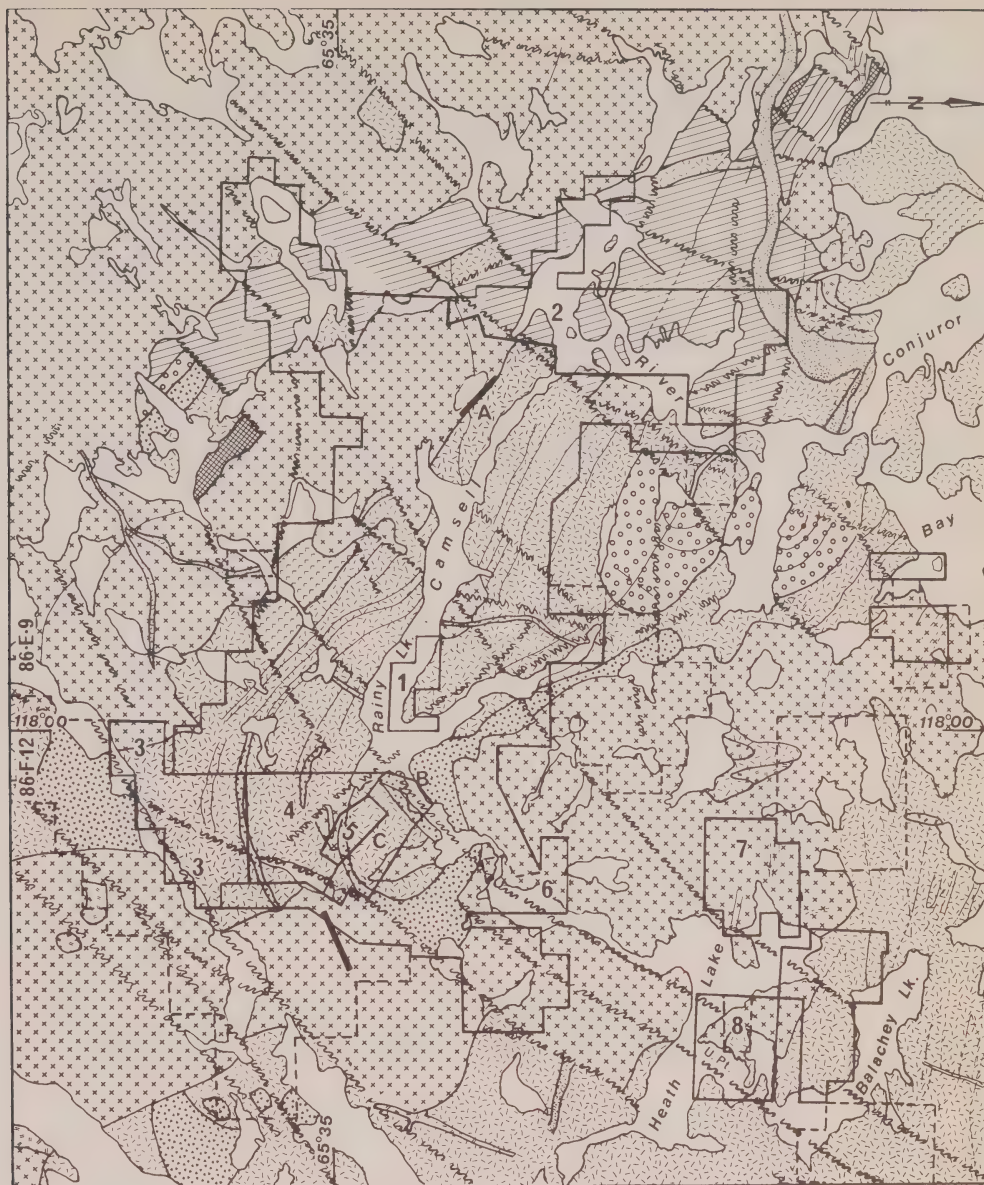
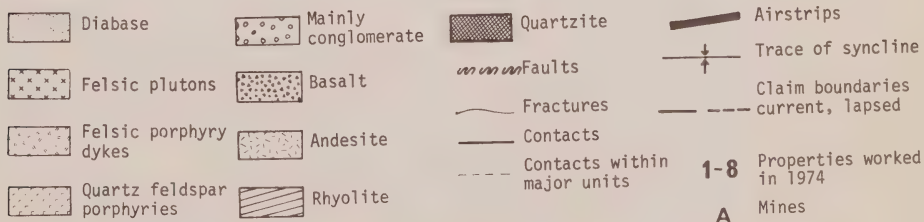


FIGURE 19

LEGEND



Geology from Murphy and Shegelski (1972); Padgham, Shegelski et al. (1974)

ICE CLAIMS
Terra Mining and Exploration Ltd.
Suite 204, 8631 - 129 Street
Edmonton, Alberta T6G 1E8

Copper, Silver
86 E/9
65°36'N, 118°01'W

REFERENCES

Badham (1972); Hoffman *et al.* (1976); Murphy and Shegelski (1972).

PROPERTY

ICE 3-8

LOCATION

The claims are 248 miles northwesterly of Yellowknife, on Rainy Lake (1 Fig. 19).

HISTORY

The claims were staked on copper veins in 1972 and transferred to Norex Resources Ltd.

Trenches on the claims were made in the 1940's if not earlier. The ICE and the MAG groups which adjoined to the north, were mapped by Jason Explorers in 1971, following an airborne scintillometer survey in 1968.

DESCRIPTION

The ICE claims are underlain by massive andesite containing about 20% pyroxene and plagioclase phenocrysts. The andesite is locally reddened by hematitic alteration and veined by epidote and chlorite filling fractures. Granitic dikes strike northeast through the claims. Quartz-carbonate veins striking 050° within the altered andesite on ICE 6 contain minor chalcopyrite, bornite, magnetite, hematite and pyrite.

CURRENT WORK AND RESULTS

Geological mapping, at one inch to 300 feet, located several copper bearing veins in altered porphyritic andesite, mostly close to a granite intrusion.

Material taken from old trenches assayed as high as 1.6% Cu and 2.2 oz./ton Ag.

NEAL-ZAP CLAIMS
Terra Mining and Exploration Ltd.
Suite 204, 8631 - 109 Street
Edmonton, Alberta T6G 1E8

Silver, Copper
86 E/9
65°38'N, 118°09'W

REFERENCES

Badham (1972); Hoffman *et al.* (1976); Lord and Parsons (1952).

PROPERTY

NEAL 8-13
ZAP 1-24

LOCATION

The claims are on Conjuror Bay, Great Bear Lake, 250 miles north-northwesterly of Yellowknife (2 Fig. 19).

HISTORY

NEAL claims were staked for Terra Mining and Exploration Ltd. in 1972.

ZAP claims were staked in 1972 by C.A. McLeish and P.H. Blanchet and were transferred to Terra Mining and Exploration Ltd. in 1973.

DESCRIPTION

The predominant rocks on the NEAL and ZAP claims are rhyolitic pyroclastics. Pyrite mineralization gives rise to small gossans. Hematite locally accompanies silver mineralization.

Diabase dikes strike northeast and northwest through the claims. A coarse grained northeast striking diabase dike is exposed over a width of more than 300 feet in the northwest corner of the claim block and an intrusive diorite or gabbro is exposed on the ZAP 24 claim.

CURRENT WORK AND RESULTS

In 1974 geological mapping at one inch to 300 feet and prospecting covered 30 of the 47 claims of the NEAL-ZAP group.

MJ CLAIMS
Seaforth Mines Ltd.
Suite 617, 789 West Pender Street
Vancouver, B.C. V6C 1H7

Copper, Zinc
86 F/12
65°34'N, 117°57'W

REFERENCES

Lord and Parsons (1952); McGlynn (1975); Padgham, Shegelski *et al.* (1974).

PROPERTY

MJ 1-19

LOCATION

The claims are 245 miles northwest of Yellowknife (3 Fig. 19).

HISTORY

The claims were staked on low-grade copper occurrences in altered volcanics in 1968 by M.B. Brezinski, and optioned to Conwest Exploration Co. Ltd. for about 5 months in 1970. In 1972 they were optioned to Seaforth Mines Ltd. but they have been returned to Brezinski (1975).

Ground EM, magnetometer, IP and geochemical soil surveys were conducted in 1973. Later an EM 16 VLF survey located an anomaly corresponding with one of the IP anomalies.

DESCRIPTION

The claims are underlain mainly by porphyritic andesite flows interbedded with tuffaceous sandstone. Felsic and intermediate flows and pyroclastics have been logged in drill cores.

The trace of the Smallwood Fault is a prominent northeast striking lineament on the claim group.

CURRENT WORK AND RESULTS

Five holes totaling 2030 feet were drilled to test IP and EM anomalies. Hole 1 yielded an assay of 1.02% Cu, 0.59% Pb, 1.62% Zn and 0.58 oz./ton Ag across an intersection of 1.7 feet. Hole 5 intersected 28 feet of 0.49% Cu.

AG CLAIMS
Terra Mining and Exploration Ltd.
Suite 204, 8631 - 109 Street
Edmonton, Alberta T6G 1E8

86 F/12
63°33'N, 117°58'W

REFERENCES

Murphy and Shegelski (1972).

PROPERTY

AG 1-14, FYRE 1, ITLDO 13

LOCATION

The AG, ITLDO and FYRE claims are adjacent to the Norex property at the east end of Rainy Lake, on the Camsell River some 250 miles northwesterly of Yellowknife (4 Fig. 19).

HISTORY

The claims were staked for Caesar Silver Mines in 1966, transferred to Norex Resources Ltd., and are now jointly held by Norex and Terra Mining and Exploration Ltd.

DESCRIPTION

The AG-ITLDO-FYRE Group covers part of a thick sequence of altered basaltic and andesitic flows and pyroclastics that have been invaded by or altered to diorite and intruded by granite and granodiorite (Murphy and Shegelski 1972).

The claims are staked around the east, south and southwest sides of the ITLDO group which contains the Norex silver deposit. Outcrop is not abundant particularly in the areas along strike from the Norex deposit.

CURRENT WORK AND RESULTS

A 5 foot deep, 45 by 95 foot trench with long axis trending northwesterly, was bulldozed across the probable extension of a fault zone on the AG 5 at the northwest edge of the claim group. The trench stopped in permafrost before bedrock was reached.

ITLDO CLAIMS
Terra Mining and Exploration Ltd.
Suite 204, 8631 - 109 Street
Edmonton, Alberta T6G 1E8

86 F/12
65°35'N, 117°58'W

Norex Resources Ltd.
610, 200 Granville Street
Vancouver, B.C. V6C 1S4

REFERENCES

Badham (1972); Hoffman *et al.* (1976); Kidd (1936); Lord and Parsons (1952); Murphy and Shegelski (1972); Padgham, Shegelski *et al.* (1974); Richardson *et al.* (1973).

PROPERTY

ITLDO 10-12

LOCATION

The claims are just south of the Camsell River 246 miles northwest of Yellowknife (5 Fig. 19).

HISTORY

The claims, staked on the westward projection of a silver vein in 1971, were transferred to Lawrence W. Hanson. In 1973 they were transferred to Caesar Silver Mines Ltd. which became Norex Resources Ltd. in April 1976. A 50% interest in the property was transferred to Terra Mining and Exploration Ltd. in 1976.

DESCRIPTION

The claims are underlain mainly by intermediate volcanics with subordinate amounts of mafic volcanics, intrusive diorite and minor amounts of tuffaceous sediments.

Only 10% of the area of claims is outcrop, and that is concentrated mostly on ITLDO 11.

CURRENT WORK AND RESULTS

A scintillometer survey of the claims in 1974 explored for silver veins and vein extensions. As many of the veins in the district have a small uranium content they tend to give slightly higher radioactive readings than the surrounding volcanics.

FR, LB, MARY CLAIMS
F. Lypka
P.O. Box 533
Yellowknife, N.W.T.

86 F/12

REFERENCES

Badham (1972); Hoffman *et al.* (1976); Padgham *et al.* (1974).

PROPERTY

FR 1-8, LB 1-2, MARY 1-20

LOCATION

The MARY claims are on Heath Lake, 235 miles northwesterly of Yellowknife (7 Fig. 19). FR 1-8 are 3 miles to the south on the shore of the Camseil River near the rapids at the southwest end of Heath Lake (6 Fig. 19). The LB 1 and 2 are a mile east of the MARY claims, one quarter mile north of Uranium Point, which divides Heath Lake into east and west bays (8 Fig. 19).

HISTORY

The MARY 1-20 were staked in 1973 on ground formerly partly covered by the COMET and STAR claims. The FR 1-8 were staked in 1973. The LB 1 and 2 were staked by F. Lypka in 1974 on ground formerly covered by the LRL 1-2.

DESCRIPTION

The LB claims cover part of the contact between clastic sediments varying from conglomerate to siltstone, and granodiorite and diorite, which is in part intrusive and may be in part older than the sediments (Hoffman *et al.* 1976, Badham 1972, Padgham *et al.* 1974).

The MARY and FR claims are underlain by granodiorite and syenite which contain small inclusions of much altered supracrustal rocks. Copper, mainly in chalcopyrite, is found in small quantities mainly in these inclusions.

CURRENT WORK AND RESULTS

Three test pits were excavated on the MARY claims, but assays were not recorded. Pit 1 on MARY 3 has a volume of 63 cubic yards, pits 2 and 3 on MARY 11 have a volume of 180 and 66 cubic yards.

Three pits on FR 6 and 7 are all 9 feet wide and 9 feet deep. Pit 1 is 21 feet long, pit 2 is 60 feet long and pit 3 is 18 feet long, giving a total volume of 1458 cubic yards. Assays returned small amounts of silver, gold and copper; the best assay reported was 0.02 oz./ton Au, 0.18 oz./ton Ag and 0.60% Cu.

AMUNDSEN BASIN

The Amundsen Basin (Fig. 18) is filled with gently and broadly folded Haydrinian Rae Group, and Helikian Dismal Lakes and Hornby Bay Groups sediments and Coppermine River Group lavas. The younger Husky Creek Formation of the Coppermine Group overlying the lavas comprises red sandstone and siltstone with intercalated basalt flows. In the recent past there was widespread exploration of the copper potential of the lavas, but at present interest appears concentrated on uranium in the Helikian sediments underlying the lavas.

Exploration of four Prospecting Permits and two large blocks of claims is reported here. The favourable units include portions of the Hornby Bay Group whose basal units of white to light grey or pink quartzite and conglomerate were deposited over an angular unconformity or nonconformity on a deeply eroded surface of Aphebian granites and porphyritic felsite. The thin bedded reddish or purple cross bedded and ripple marked quartzites found locally in the basal section of the Hornby Bay Group could be host rocks for

uranium deposits, and the whole lower part of the group may have been sufficiently permeable to permit uranium bearing solutions to migrate into suitable depositional sites. Activity is concentrated along unconformities above and below unit 11 of Baragar and Donaldson (1973).

PROSPECTING PERMITS 310, 311, 312
B.P. Minerals Ltd.
Suite 212
25 Adelaide Street, East
Toronto, Ontario M5C 1Y2

86 N/2, 3, 4
67°07'N 117°15'W

REFERENCES

Baragar and Donaldson (1973); Craig (1960); Craig *et al.* (1960).

PROPERTY

Prospecting Permits 310, 311 and 312

LOCATION

The permits are approximately 330 miles north-northwesterly of Yellowknife.

HISTORY

In 1969 the Aquitaine Company of Canada Ltd. discovered and staked the PEC claims on pitchblende and secondary uranium minerals in Helikian sandstones and conglomerates, south of Dismal Lakes.

Subsequently Imperial Oil staked the YUK group immediately north of the Aquitaine property.

In 1973 Prospecting Permits 310, 311 and 312 were granted to B.P. Minerals Ltd. and Prospecting Permit 316, covering nearby 86 N/6, was granted to Imperial Oil Ltd.

DESCRIPTION

Helikian sediments of the Hornby Bay Group, Aphebian granites, and feldspar porphyries which may be ignimbrites are the main rocks underlying the permits. The contact of the Aphebian granite with overlying rocks is reportedly marked by a regolith.

The Teshierpi Fault which has a left handed slip component, strikes northeast through 86 N/2 and 3 forming the boundary between Aphebian granite to the northwest and feldspar porphyry to the southeast. The Hornby Bay Group is gently folded.

CURRENT WORK AND RESULTS

Following a helicopter-borne gamma-ray spectrometer survey on easterly directed lines one mile apart, and a recording of the gross geology of the 3 Prospecting Permits, selected outcrops were prospected with a scintillometer.

Lake sediment and lake water geochemical surveys located 10 uranium

anomalies. Samples were analyzed for U, Cu, Pb, Zn, Mn and Fe and conductivity and pH of lake waters measured.

Uranium mineralization was not found. Minor radioactive anomalies in the lower Hornby Bay Group on the southeast part of 86 N/4 and the southwest part of 86 N/3 are mainly caused by thorium.

PROSPECTING PERMIT 316
Imperial Oil Ltd.
111 St. Clair Avenue, West
Toronto, Ontario M5C 1B5

Uranium
86 N/6
67°22'N, 117°15'W

REFERENCES

Baragar and Donaldson (1973); Craig (1960); Craig *et al.* (1960).

PROPERTY

Prospecting Permit 316

LOCATION

The Permit is 350 miles north-northwest of Yellowknife.

HISTORY

Prospecting Permit 316 was acquired in 1974 by Imperial Oil Ltd. to cover an area of potentially uraniferous Helikian quartzose sandstone and conglomerate.

DESCRIPTION

Helikian sediments of the Hornby Bay Group and the overlying Dismal Lakes Group in the permit area lie unconformably on Aphebian granites, porphyritic rhyolite and quartz feldspar porphyry. The Helikian and Aphebian rocks are generally in fault contact. Gentle folding and northward tilting took place prior to deposition of the Dismal Lakes Group. Sandstones of units 8 and 11 (Baragar and Donaldson 1973) host radioactive occurrences in the area.

Radioactive boulders of sandstone and conglomerate (unit 11, Baragar and Donaldson 1973) have been found near Mountain Lake on the southeast part of the area. Glacial transport direction is northwesterly, changing abruptly to northerly just west of the permit area (Craig 1960).

CURRENT WORK AND RESULTS

During the summer of 1974 a helicopter-borne gamma-ray spectrometer survey was flown on lines one eighth mile apart except in areas underlain by granite where the line spacing was increased to one quarter mile. Later ground scintillometer surveys located 4 radioactive occurrences and 544 radioactive boulders.

Geological mapping at one inch to 5 miles and scintillometer surveys delineated boulder trains.

A 336 foot diamond drill hole was completed on the west shore of Uke

Lake just west of Aquitaine Company of Canada Ltd.'s PEC group, and from which boulder trains extend westward towards Mountain Lake.

YUK CLAIMS

Imperial Oil Ltd.
111 St. Clair Avenue, West
Toronto, Ontario M5C 1B5

Uranium

86 N/7

67°18'N, 116°57'W

REFERENCES

Baragar and Donaldson (1973); Craig *et al.* (1960).

PROPERTY

YUK 1-67

LOCATION

The property lies about 340 miles north-northwest of Yellowknife.

HISTORY

YUK 1-67 were staked in 1973 to cover the source area of radioactive glacial erratics for Imperial Oil Ltd. The claims were explored in 1973 by geological, radiometric, soil gas and geochemical surveys. Radioactive boulder locations were plotted to develop a picture of the boulder train and its probable source.

DESCRIPTION

The claims are underlain by Helikian sediments. Outcrop is sparse and extensive sandy glacial outwash mantles the eastern part of the claims.

Units 8, 9, 10 and 11 of Geological Survey of Canada Map 1338A (Baragar and Donaldson 1973) underlie the YUK claims.

Northeast striking faults terminate against a northwest striking fault, which passes diagonally through the YUK claims and the adjoining PEC claims, to the south.

CURRENT WORK AND RESULTS

Geological mapping, airborne radiometric surveying and 2298 feet of diamond drilling in 18 holes probed for the source or sources of radioactive erratics. A source was not found.

BRUCE, JEFF, MIKE, TIM CLAIMS

B.P. Minerals Ltd.
Suite 212
25 Adelaide Street, East
Toronto, Ontario M5C 1Y2

Uranium

86 N/7

67°20'N, 117°00'W

REFERENCES

Baragar and Donaldson (1973); Craig (1960); Craig *et al.* (1960).

PROPERTY

BRUCE 1-28, JEFF 1-34, MIKE 1-29, TIM 1-15

LOCATION

The claims are 2 miles east of Mountain Lake and 340 miles north-northwest of Yellowknife.

HISTORY

The claims, staked in 1974 for B.P. Minerals Ltd., cover secondary uranium mineralization in quartz arenite. Radioactive glacial erratics had previously been found in the area.

DESCRIPTION

The claims are underlain by quartz arenite of the Hornby Bay Group folded into a gently northward plunging anticline. Northeast and northerly striking faults which cross the claims are developed throughout the Dismal Lakes area. A secondary uranium mineral, possibly uranophane, occurs in fractures at the crest of the anticline, where the quartz arenite is more abundantly fractured.

CURRENT WORK AND RESULTS

Ground work in 1974 included geological mapping and ground radiometric survey of the area surrounding the secondary uranium showing. Ratios of uranium to thorium in the vicinity of the showing averaged 10:1.

Lake water, lake sediment and soil samples from the claims were analyzed for U, Cu, Pb, Zn, Mn, Fe and Ag. Because the soil samples were taken approximately 1500 feet apart from only two thirds of the claim block, interpretation is difficult. A relationship between anomalous values and buried extensions of faults has been tentatively suggested.

SLAVE PROVINCE

The Slave Structural Province is a roughly elliptical area of 75,000 square miles which is mainly surrounded by the 50,000 square mile Proterozoic Bear Province (Fig. 18). The Slave Province is a complex of remnants of Archean sedimentary basins with marginal volcanic belts surrounded and locally intruded by vast areas of plutonic igneous and metamorphic rocks. Most of these are younger intrusions but some are granitoid basement, commonly appearing as mantled diapirs that may be resurgent into the surrounding supracrustals. Large areas in the northern half of the province have yet to be mapped by more than helicopter traverses at 8 mile intervals.

Exploration targets in the Slave Province include volcanogenic massive sulphide deposits which may contain significant amounts of copper, zinc, or silver. Some contain relatively large proportions of lead. Other targets are gold quartz veins and gold quartz-carbonate shear zones, from which the only significant mineral production has been won, and apparently stratabound auriferous sulphide iron formation, that is possibly of exhalative origin. Discoveries of base metal-silver sulphide deposits by Cominco on their Bathurst Norsemans option sparked extensive exploration in the northern Slave volcanic belts. More recent discoveries of similar material in the Takijuq-

Itchen-Point Lakes belt have maintained a high level of activity.

Access to the Slave Province properties, except during break-up and freeze-up, is particularly easy because there is rarely more than a mile or two between lakes suitable for fixed wing aircraft which are readily available in great variety at Yellowknife. The southern edge of the province has reasonable access from Great Slave Lake or the Yellowknife Highway and Ingraham Trail. At various times winter roads have been opened to gold camps at Discovery, Tundra, or more recently at the WT Group. Nevertheless, the present lack of a reliable, low cost transport system for bulk materials will inhibit mining developments for some time.

Properties under exploration in the Slave Province have been organized into two groups, base metal properties and gold properties. Base metal exploration is considered under two sections, the Hackett-Back River district where more than 35 claim groups were worked, and the remainder of the Slave Province, where 12 properties were explored. Most of the gold exploration was concentrated in the southern part of the Province and 13 of the gold prospects treated are shown on Figure 20.

GOLD EXPLORATION IN THE SLAVE PROVINCE SOUTH OF 66°N

Gold has been the main product of Slave Province rocks for nearly 40 years. At present the Yellowknife mines, overall the major sources of gold, are the only producers.

After a decade of relative inactivity, gold exploration increased considerably with the freeing of the gold price, and its rapid rise during 1973. Work began on major underground projects at the Camlaren mine, a minor producer in the 1960's, at the WT group, and on a drilling project at the TT claims.

All of these claims are underlain by Yellowknife Supergroup greywackes which host numerous gold quartz veins. Such veins have rarely provided sufficient tonnage or consistent enough grades to support mining.

Numerous properties, mainly within 100 miles of Yellowknife, were tested or merely kept in good standing by some trenching.

More important drilling projects include that on the Colomac dike near Indin Lake and that on the MOS claims east of Rae. Extensive drilling also tested the Sidewalk vein on the Arcadia property on the Arctic coast. All of these projects tested mineralization of far greater extent, but lower grade than typifies the best of the greywacke-hosted auriferous veins.

Gold properties worked in the southern part of the Slave Province are described below and most are located on Figure 20. The Arcadia property is described in the following section.



Figure 20. Geological sketch of the southern Slave Province showing gold properties (1-20) and base metal properties (I-VI) worked in 1974.

JAX LAKE PROJECT
Perry River Nickel Mines Ltd.
Suite 5
932 - 12 Avenue, S.W.
Calgary, Alberta
T2R 0J4

Gold
76 D/6
64°18'N, 111°24'W

REFERENCES

Baragar (1961, 1962); Folinsbee (1949); Moore (1956).

PROPERTY

DW 1-33

LOCATION

The claims are approximately 160 miles northeast of Yellowknife and 20 miles northwest of Tundra Mines. At times a winter road has linked Tundra Mines with Yellowknife.

HISTORY

Gold was first discovered in the area in 1939.

The showings have been known since 1945 when Newnorth Gold Mines Ltd. staked 28 claims at Jax Lake. Trenching and 2377 feet of diamond drilling tested five gold showings in 1946.

In 1960 the Big Four Syndicate staked all but the most southerly showing as the 27-claim JAX group and drilled at least five holes on the No. 1 zone and eight holes on the No. 2 zone. The following year 4144 feet were drilled on the Nos. 1 and 2 zones, and a lease was obtained. The JAX group lapsed and the DW claims were staked in 1972 and 1973 by K. Rasmussen to cover the gold showing on the west side of Jax Lake. The claims were subsequently transferred to Golden Ram Resources Ltd. in 1973. An agreement between Golden Ram Resources Ltd. and two companies, Savanna Resources Ltd. and Perry River Nickel Mines Ltd., was effected in 1975. Apparently 1974 work by Arctex Engineering Services of Yellowknife was done for Perry River Nickel Mines Ltd. prior to that agreement.

DESCRIPTION

Northerly striking, steeply east dipping, dominantly mafic volcanics underlie three quarters of the claim block. Several sill-like bodies of metagabbro up to about one mile long and 500 feet thick occur within the metavolcanics. Along the eastern margin of the claim block the volcanic rocks are in contact with metasediments; greywacke, slate and phyllite in the south, and nodular schists in the north.

The gold showings are zones of quartz and quartz-carbonate stringers in amphibolite, derived from metavolcanics. Pyrrhotite, arsenopyrite, pyrite and scarcer chalcopyrite comprise less than 1% of the material in the mineralized zones.

CURRENT WORK AND RESULTS

In 1974 trenching and mapping, mainly on the No. 2 zone on the south shore of Jax Lake, traced surface exposures of mineralized quartz veins intersected at depth by previous diamond drilling. At the surface the veins were found to have lower grade and less strike continuity than their presumed extensions in depth. Surface samples taken across the full width of the zone assayed 0.112 oz./ton Au over 3.0 feet. The best assay was 0.284 oz./ton Au across a vein width of 0.5 feet.

RAM CLAIMS
Ram Petroleums Ltd.
520, 401 Bay Street
Toronto, Ontario
M5H 2Y4

Gold, Silver
76 E/11
65°43'N, 111°17'W

REFERENCES

Allan *et al* (1973); Bostock (1967); Sawkins and Rye (1974); Schiller and Hornbrook (1964); Tremblay (1967, 1976).

PROPERTY

RAM 1-18

LOCATION

The claims lie approximately 240 miles northeast of Yellowknife.

HISTORY

The RAM claims were staked in 1974, mainly on ground first staked in 1961 as the FOX claims, by Conwest Exploration Company Ltd. following Canadian Nickel Company Ltd.'s discovery of gold in amphibolite, about 2 miles to the north. Conwest optioned their property to Falconbridge Nickel Mines in 1962 and intensive exploration and diamond drilling were completed. About 10% of the RAM group covers ground previously held by Canadian Nickel Ltd. as the MOP claims.

DESCRIPTION

The claims are underlain by Archean Yellowknife Supergroup greywackes with thin amphibolite lenses and mafic sills, cut by northeast striking felsite dikes and northwest striking diabase dikes. About 25% of the claim group has a thin covering of glacial drift through which bedrock and frost heave locally project. The remainder of the claim block is covered by thick glacial sediment.

Amphibolite lenses in the metasediments locally contain pyrite and arsenopyrite. Garnets, common on the Canadian Nickel Ltd. prospect to the north, are rare, and fold noses, which contain the best gold mineralization in the Contwoyto Lake area, have not been observed on the RAM claims.

CURRENT WORK AND RESULTS

Geological mapping, prospecting, isolated blasting, a trench and a magnetometer survey investigated 13 gold showings in amphibolite.

The esker showing, located on claim RAM 10, is the only showing worth investigating further by diamond drilling. Gold values are low, assaying 0.03 oz./ton Au, but the amphibolite appears to be consistently mineralized and quite wide.

FIN CLAIMS

Canadian Superior Exploration Ltd.
Suite 2201
1177 West Hastings Street
Vancouver, B.C.
V6E 2K3

Gold
76 E/11
65°44'N, 111°08'W

REFERENCES

Allan, Cameron et al (1973); Bostock (1976); Sawkins and Rye (1974); Schiller and Hornbrook (1964); Tremblay (1967).

PROPERTY

FIN 1-34

LOCATION

The FIN claims lie immediately south of the International Nickel Company of Canada Ltd. gold deposit, at the north end of Contwoyto Lake, 240 miles northeast of Yellowknife.

HISTORY

In 1961 Inco Ltd. discovered gold-bearing outcrops on the northwest corner of Contwoyto Lake. Subsequently the FOX claims were staked by Conwest Exploration following a nearby discovery of gold in amphibolites. Falconbridge Nickel Mines optioned and explored the FOX group in 1962, but only geophysical surveys were done on the property. No work has been done in the Contwoyto Lake area since 1965.

DESCRIPTION

The claim block is underlain by Archean metasediments which include garnet-cummingtonite amphibolite, a metamorphosed iron formation, according to Bostock (1976). These host the Contwoyto Lake type gold deposits on the Canadian Nickel claims to the north. Outcrop is scarce on the FIN claims.

CURRENT WORK AND RESULTS

The FIN claims were staked for Canadian Superior Exploration Ltd. in 1974 and cover what was the FOX claims.

Ground magnetometer surveys of the entire claim block followed by detailed magnetometer and SP surveying in favourable areas located 15 anomalies, seven of which had originally been found by Falconbridge Nickel Ltd. in 1963.

BULLMOOSE LAKE PROPERTY
Duke Mining Limited
615 - 6th Street
New Westminster, B.C.

Gold
85 I/7
62°21'N, 112°45'W

REFERENCES

Baragar and Hornbrook (1963); Henderson (1941); Lord (1951); Padgham, Kennedy *et al.* (1975).

PROPERTY

TA 1-6

LOCATION

The property lies in the Bullmoose Lake area, 52 miles east-southeast of Yellowknife and 4 miles west of Francois Lake (2 Fig. 20). Access is by aircraft or by 32 miles of winter road from the mouth of the Francois River.

HISTORY

The TA group was staked in 1939. In 1941, following prospecting, trenching and diamond drilling, an inclined shaft was sunk and a small mill put into operation. In 1967 Duke Mining Ltd. acquired the property and in 1968 the area around the shaft was sampled and trenched. The best assay of surface material was 13.72 oz./ton Au and 2.20 oz./ton Ag over 1 foot. In 1969 5000 feet of drilling investigated a vein striking south from the old shaft. Most intersections were narrow and assayed less than 1 oz./ton Au but one hole assayed 31.15 oz./ton Au over 0.4 feet and 16.89 oz./ton Au over 1.2 feet. In 1972 1428 feet of drilling intersected quartz veins averaging less than 2 feet wide and containing from trace to 0.54 oz./ton Au.

DESCRIPTION

The country rocks are nodular, schistose meta-greywackes, phyllites and fine-grained mica schists of the Yellowknife Supergroup. Quartz veins and seams lying parallel to the enclosing strata are in places minutely folded and intensely fractured. Four veins have been explored.

The 2-foot wide No. 1 vein is exposed for 430 feet of strike and contains a 50-foot long, 1.4-foot wide zone grading 0.5 oz./ton Au. Vein No. 2, exposed for 1250 feet along strike, contains arsenopyrite, pyrite, scheelite, and visible gold in fine-grained, white to grey quartz. A 300-foot by 0.6-foot section of this vein near the shaft grades 3.69 oz./ton Au. Vein No. 3, one mile north of the old shaft, is exposed for 1500 feet along strike and is 1.5 feet wide. It contains a 120-foot long, 1.5-foot thick shoot that grades 0.3 oz./ton Au. Vein No. 4, exposed over a 625-foot strike length, consists of irregular, discontinuous quartz bodies containing gold and scheelite.

CURRENT WORK AND RESULTS

Surface trenching and drilling indicated high grade gold in 2 veins. In preparation for an underground development program to start in 1975 Terra Mines Ltd. moved a scooptram and compressor to the property. That company can earn a 50% interest by expending \$200,000 in development work on the TA-DS properties of Duke Mining Ltd.

STORM CLAIMS
Delphi Resources Ltd.
904 Helmcken Street
Vancouver 1, B.C.

Gold, Scheelite
85 I/7, 10
62°30'N, 112°48'W

REFERENCES

Henderson (1941); Lord (1951).

PROPERTY

STORM 1-13

LOCATION

The property lies on the east side of Consolation Lake, 46 miles east of Yellowknife (4 Fig. 20).

HISTORY

STORM 1-6 were staked in 1940 by J. Irwin and H. Lang, and were transferred in 1941 to Storm Yellowknife Syndicate. In 1942 Tungsten Developers built a small mill and produced 1917 pounds of concentrates, grading 35% WO_3 from 11 tons of ore.

The remaining claims were staked in 1972 by J. Irwin.

DESCRIPTION

The area is underlain by greywacke and some slate, impure quartzite and argillite of the Yellowknife Supergroup.

Quartz veins containing minor amounts of gold, scheelite, arsenopyrite and pyrite occur parallel to bedding and along fractures.

CURRENT WORK AND RESULTS

Two quartz occurrences exposed by old trenches and pits on STORM 2 were examined. Chip and mud samples were taken and assayed for gold. The best assay obtained was 1.08 oz./ton Au from a small vein about 30 feet long and 0.7 feet wide.

NC CLAIMS
C. Vaydik
Yellowknife, N.W.T.

Gold
85 I/12
62°32'N, 113°47'W

REFERENCES

Henderson and Jolliffe (1937); Henderson (1938).

PROPERTY

NC 1

LOCATION

The property lies on the southeast end of Prelude Lake, 20 miles

east-northeast of Yellowknife (6 Fig. 20).

HISTORY

The claim was staked by D. Nickerson and transferred to C. Vaydik in 1972.

DESCRIPTION

The area is underlain by quartz-mica schists, hornfels and meta-greywackes of the Yellowknife Supergroup. These rocks are cut by irregular, discontinuous quartz veins containing minor amounts of arsenopyrite, pyrite and gold.

CURRENT WORK AND RESULTS

The following work was completed in 1973 but was not cited in the 1973 Mineral Industry Report.

Chip and muck samples taken within and around a 120-foot long by 30-foot wide mineralized zone were assayed for gold. Results were poor except for 2 samples which assayed 1.96 and 0.98 oz./ton Au. These were taken from a 1.5-foot wide, 50-foot long quartz vein.

AS, AU, CABIN ISLAND, EAGLE, FAB, GAB,
KAY, POLE, RIBB, Y CYMRO CLAIMS

Gold
85 I/7, 11, 14
85 P/3, 4
85 O/1

REFERENCES

Henderson (1976).

PROPERTY

Claim	Owner	NTS	No. on Map 20
AS 1-4	I.B.C. Scott	85 I/7	2
EAGLE 1-5	C. McCarthy	85 I/11	7
KAY 1	J.S. Turner	85 I/11	5
Y CYMRO 2-7	D.M. Collier	85 I/11	7
18 AU claims	Nor-Can Minerals Ltd.	85 I/14	9
CABIN ISLAND 1-2	R.B. Fells	85 I/14	3
RIBB 1-2	Duke Mining Ltd.	85 I/14	9
POLE 1-2	L. Rocher	85 O/1	14
FAB 1-5	F. Furlong	85 P/3	11
GAB 1-2	Precambrian Mining Services Ltd.	85 P/4	20

LOCATION

The properties lie in a 2100 square mile area, just north of Great Slave Lake (Fig. 20). All lie east of the Yellowknife River.

HISTORY

The AS and Y CYMRO claim groups were staked in 1969; the EAGLE, FAB, GAB, POLE and RIBB claim groups in 1972; the AU and CABIN ISLAND claim

groups in 1973; and the KAY claim groups in 1974.

The only previous work recorded is on the POLE claims. In 1938 gold was discovered and the MG claims were staked for the Mining Corp. of Canada Ltd. From 1939 to 1948 trenching was carried out. In 1964 the LOG claims were staked by Precambrian Mining Services Ltd. to cover the gold showing. Thirteen trenches were excavated. In 1969 the LOG claims were restaked as the POLE claims by L. Rocher.

The FAB claims lapsed in 1976.

DESCRIPTION

The properties are underlain by interbedded greywackes and slates of the Yellowknife Supergroup. Quartz veins, lenses and stringers containing varying amounts of gold, silver, pyrite, pyrrholite, galena and arsenopyrite are found along fractures, shear zones and bedding planes.

CURRENT WORK AND RESULTS

The following is an outline of the work on these claim groups in 1973 and 1974.

AU:	7 trenches, assays ranged from .008-.035 oz./ton Au; 0.06-0.67 oz./ton Ag; and .035-6.75% Cu.
AS:	1 trench, assays ranged from trace to 0.14 oz./ton Au and 0.20-3.90 oz./ton Ag.
CABIN ISLAND:	1 pit, gold assays were nil.
EAGLE:	1 trench, assays ranged from nil to trace gold and silver, and 0.02-0.04% Cu.
FAB:	2 trenches, no assays.
GAB:	5 trenches, no assays.
KAY:	1 trench, with assays of 0.41 oz./ton Au.
POLE:	3 trenches, no assays.
RIBB:	1 trench, no assays.
Y CYMRO:	2 trenches, assays ranged from 0.02-2.02 oz./ton Au and 3.66-10.92 oz./ton Ag.

WT GROUP
Precambrian Shield Resources
9305 - 169 Street
Edmonton, Alberta

Gold
85 I/14
62°47'15"N, 113°14'10"W

REFERENCES

Baragar (1962); Henderson (1976a); Henderson (1942); Lord (1951); Schiller and Hornbrook (1964).

PROPERTY

WT 1-3

LOCATION

The claims lie just south of Myrt Lake, 40 miles northeast of Yellowknife (8 Fig. 20). A winter road extends from the end of the Ingraham Trail past the property.

HISTORY

Gold showings on the WT claims were staked as the SDC claims in 1938. During 1939 trenching, sampling and diamond drilling by Dome Mines Ltd. indicated 503 tons per vertical foot assaying .30 oz./ton Au in a zone measuring 240 by 20 feet. A portion of this zone aggregating 162 tons per vertical foot grades 0.61 oz./ton Au.

In 1960 W. Ternowski staked the WT claims. Giant Yellowknife Mines Ltd. optioned the claims in 1961 but after detailed geological mapping and sampling the claims reverted to Ternowski who optioned them to Consolidated Discovery Mines Ltd. in 1962. During 1962-63 geological mapping and 3930 feet of diamond drilling in 40 holes delineated a high grade shoot in the No. 1 zone aggregating 85 tons per vertical foot with grade approximating 0.75 oz./ton Au. There is indication of increasing grade with depth.

In 1974 WT 1-3, covered by mining lease 2438, were held by Precambrian Shield Resources. Surface surveys were done in 1973 prior to underground exploration in 1974.

DESCRIPTION

The property is underlain by deformed greywackes and slates of the Archean Yellowknife Supergroup. Two showings have been found, No. 1, striking northwest, is on WT 1; No. 2, striking east, is on WT 2.

Both showings consist of massive and stockwork quartz in close spatial association with a steeply southeast plunging S-shaped fold. A northwest striking fault is associated with this fold and a northeast striking fault probably lies between the No. 1 and No. 2 showings. Northwest of the No. 1 showing two veins branch out from the main quartz mass.

Gold is associated with pyrrhotite, pyrite, arsenopyrite, galena, chalcopyrite and sphalerite. Beds of quartz are folded with the bedding and may originally have been chert bands. Other quartz veins crosscut the bedding. Similar relationships occur on the Contwoyto Lake gold prospects, but although thin iron rich bands are present in the sediments on the WT group, there is nothing comparable to the garnet-cummingtonite amphibolite at Contwoyto Lake.

CURRENT WORK AND RESULTS

Precambrian Shield Resources reported that 466 feet of 15% grade decline, about 460 feet horizontally, has been driven easterly under the No. 1 showing. Some 405 feet of drifting was done from various levels along this decline.

At about 120 feet from the portal 24 feet grading 0.15 oz./ton Au was intersected by the decline. The No. 1 zone, which was intersected near the bottom of the decline, assayed 0.5 oz./ton Au over 28 feet. North-northwest of this intersection a diamond drill hole by Dome Mines Ltd. showed 0.35 oz./ton Au across 8 feet at a comparable elevation, suggesting continuity of the zone along strike. Chip samples were taken of the walls, and samples were taken from the muck during the course of drifting and crosscutting.

Diamond drilling, mainly from the new underground workings, totaled 3650 feet.

AP CLAIMS
Nemco Exploration
534 789 West Pender Street
Vancouver, B.C.

Gold
85 I/14
62°47'N, 113°12'W

REFERENCES

Henderson (1976); Henderson and Jolliffe (1941).

PROPERTY

11 AP claims

LOCATION

The property lies on the east side of the Cameron River, just downstream from Myrt Lake, approximately 40 miles northeast of Yellowknife (8 Fig. 20).

HISTORY

The Prospect Street Syndicate staked and prospected a large block of claims in 1945 which included the present AP group. Since then little work has been done. AP 4-10 were staked in 1972 and AP 1, 2, 10 and 11 in 1974 by D. Nickerson. The claims were subsequently transferred to C. Vaydik, and work in 1974 was by A. Ashton for Nemco Exploration Ltd.

DESCRIPTION

The claims are underlain by mafic to felsic volcanics except for a small area southwest of the Cameron River, which is underlain by greywackes and slates of the Yellowknife Supergroup. A tongue of felsic volcanics bounded by mafic and intermediate volcanics strikes northwest and extends from the southeast corner towards the northeast corner of the claims.

Gold assays in 1974 from gossan zones and areas of silicified and/or sulphide bearing volcanics, yielded only trace values. Gold has previously been reported as associated with arsenopyrite in the claim area.

CURRENT WORK AND RESULTS

The claims were mapped at one inch to one half mile and 18 samples were assayed for gold and silver.

AUX CLAIMS
Duke Mining Ltd.
7107 - 83 Street
Edmonton, Alberta

Gold
85 I/14
62°48'N, 113°11'W

REFERENCES

Baragar (1961, 1966); Henderson (1976); Henderson (1941b); Henderson and Jolliffe (1941); Lambert (1974); Lord (1951).

PROPERTY

AUX 1-7

LOCATION

The claims lie about 45 miles northeast of Yellowknife (8 Fig. 20). A winter road extends from Yellowknife to Ross Lake, 3 miles south of the claims.

HISTORY

The original 6-claim AUX group was staked in 1957 on ground previously held as a large block of claims staked in 1945 for the Prospect Street Syndicate. The RON group was included in this block, which covered the Frank zone. AUX 1 and 2 now include this zone which was drilled in 1960 while under option to Vanguard Explorations Ltd.

The AUX claims were restaked at various times by A. Mandeville, who owned them at the time of the 1974 property examination.

DESCRIPTION

The eastern-most AUX claims are underlain by tonalilic granite gneiss that is overlain unconformably by mafic volcanic rocks (Henderson 1976a) of the Cameron River volcanic belt (Baragar 1966). The Frank Vein, which lies in the eastern part of the AUX group, is reported to be in a zone of mixed granitic, metavolcanic and metamorphosed mafic dikes which probably equates to the basement gneiss of Henderson (1976a).

The Frank Vein is exposed by 15 trenches over a distance of 160 feet. It strikes approximately 025° , has a steep easterly dip, and in places is a single quartz vein, but elsewhere it is a number of parallel veins. Up to 21 feet of vein material has been intersected in drill holes.

CURRENT WORK AND RESULTS

A few chip samples and geochemical frost boil samples were taken by consultants during examination of the property on May 10 and 11, 1974.

TT CLAIMS

Duke Mining Ltd.
7107 - 83 Street
Edmonton, Alberta

Gold
85 I/14
 $62^{\circ}45'N$, $113^{\circ}17'W$

REFERENCES

Fyson (1975); Henderson (1976); Henderson (1941, 1941b); Henderson and Jolliffe (1941).

PROPERTY

TT 1-15

LOCATION

The claims are on the south side of Dome Lake (8 Fig. 20) approximately 40 miles northeast of Yellowknife and 4 miles northwest of Ross Lake, which is on the route of a winter road.

HISTORY

The TT group was staked by J.S. Turner in 1972 and transferred to Duke Mining Ltd. in 1973.

The property has been staked and prospected intermittently since 1938 and was once covered by the CW, JOY and DOME claims. Records of work performed, including diamond drilling in 1944 and earlier, are far from complete.

DESCRIPTION

The claims are underlain by isoclinally folded metasediments, mainly greywacke, of the Yellowknife Supergroup. A number of quartz veins and lenses occur on the property; the most important gold showings are the No. 14 Vein on TT 8 and TT 11, the Lambert Vein on TT 8, and the No. 18 Vein on TT 3. All 3 veins strike northwest, the No. 14 Vein dipping steeply to the northeast and the Lambert Vein to the southwest. There is a tendency for these gold-bearing quartz veins to lie parallel or subparallel to the bedding.

Structure is complex, with 3 periods of folding according to Fyson (1975).

CURRENT WORK AND RESULTS

During 1974 13 holes, a total of 1820 feet of diamond drilling, probed the No. 14 Vein.

Eight holes totaling 987 feet were drilled on the Lambert Vein. Erratic gold values were obtained from intersections one to two feet wide.

RIBB CLAIMS
Duke Mining Ltd.
7107 - 83 Street
Edmonton, Alberta

Gold
85 I/14
62°46'N, 113°25'W

REFERENCES

Henderson (1976); Henderson (1941b); Henderson and Jolliffe (1941); McGlynn (1971).

PROPERTY

RIBB 1-6

LOCATION

The claims are 40 miles northeast of Yellowknife (9 Fig. 20). The CHICK and MAC groups are contiguous with the RIBB claims.

HISTORY

Gold was first discovered here in 1948. The ground was staked in 1952 as the CHICK claims.

A 15-foot deep prospecting pit, a number of trenches, and about 2000

feet of diamond drilling in 14 holes, were completed by the Beneventum Syndicate and its successor Beneventum Mining Co. Ltd. in 1956 and 1957. Seven of the 14 holes were drilled on the Number 1 Zone, in the southeast part of the RIBB 1. An intersection grading 3.35 oz./ton Au over 8.1 feet and another of 1.30 oz./ton Au over 4.7 feet were reported. The remaining holes were drilled on the Number 2 Zone, in the northeast corner of RIBB 2.

A. Mandeville recorded RIBB 1 on March 21, 1972, and RIBB 2-6 on May 25, 1972. The claims were transferred to Duke Mining Ltd. on February 13, 1974.

DESCRIPTION

Quartz veins cutting metasediments of the Yellowknife Supergroup on the RIBB claims contain erratic gold values. The Number 1 Zone, which strikes 145°, has been traced for 450 feet and attains a maximum width of 10 feet where it is thickened at the nose of a tight fold. The narrower Number 2 Zone which trends 115°, consists of a number of distinct lenses which have been traced for 300 feet.

In 1973 the writer took samples from the dump beside the shaft on the Number 1 Zone which assayed generally less than 0.35 oz./ton Au while chip samples from across the thickened part of the Number 1 Zone vein exposed in the shaft yielded only traces of gold. Chip samples from a trench across the Number 2 Zone assayed 2.15 oz./ton Au across 2 feet and 7.33 oz./ton Au across 1 foot.

CURRENT WORK AND RESULTS

A small amount of sampling was done in the course of property examinations by consultants.

WHIZ-BANG CLAIM
Nemco Exploration Ltd.
534 789 West Pender Street
Vancouver, B.C.

Gold
85 I/14
62°55'N, 113°20'W

REFERENCES

Fyson (1975); Henderson (1976); Henderson (1941b).

PROPERTY

WHIZ-BANG

LOCATION

The claims are near Gordon Lake about 45 miles northeast of Yellowknife (10 Fig. 20).

HISTORY

The claim was staked in 1972 and transferred to C. Vaydik.

DESCRIPTION

A north striking 18-inch wide auriferous quartz vein has been traced

for 180 feet on the WHIZ-BANG claim. It dips 40° west in Yellowknife Super-group greywackes that strike 145° and dip 85° southwest. Arsenopyrite rich quartz from the centre part of the vein assayed 2.32 oz./ton Au.

CURRENT WORK AND RESULTS

Three showings were sampled on July 5, 1974 during a geological evaluation.

CAMLAREN MINE
Discovery Mines Ltd.
Suite 1011
2200 Yonge Street
Toronto, Ontario M4S 2C6

Gold
85 I/14
62°59'N, 113°12'W

REFERENCES

Baragar and Hornbrook (1963); Henderson (1976); Henderson (1941a, 1941b); Henderson and Fraser (1948); Lord (1951); McGlynn (1971); Schiller (1965); Thorpe (1972).

PROPERTY

CAMLAREN 1-6, 16-20, 22, 31-34; BINGO 4, 5, 8, 9

LOCATION

The property lies near the east shore of Gordon Lake, 53 air-miles northeast of Yellowknife (11 Fig. 20). At various times in the past winters roads have been constructed to connect Camlaren with Yellowknife and Discovery Mine.

HISTORY

In 1937, when diamond drilling indicated ore on the property, Camlaren Mines Ltd. was incorporated to acquire and develop it. A shaft was sunk to a depth of 380 feet on the Hump vein. Drifts and crosscuts on the 200 and 350 foot levels indicated 13,177 tons of ore grading 0.62 oz./ton Au. A second shaft was sunk on the '31' vein but no ore shoots were found. Diamond drilling failed to locate ore shoots on the H vein. Additional exploration in 1958 indicated reserves of 15,000 tons grading 0.9 oz./ton Au on and around the Hump vein.

In 1962 Discovery Mines Ltd., under an agreement with Camlaren Mines Ltd., mined the best section of the Hump vein, above the 350-foot level, and in 1963 shipped 12,174 tons by winter road to the Discovery mill to produce 13,885 oz. Au and 3738 oz. Ag. Work on the property was then suspended until 1974, when a substantial improvement in the price of gold suggested profitable operations might be resumed.

DESCRIPTION

The country rocks, thinly bedded slates and greywackes of the Yellowknife Supergroup, enclose 3 gold-bearing quartz veins, the Hump, '31' and H.

The Hump vein is on the nose of a northeast striking anticline that plunges 50° to 55° northeast. It is 3 to 4 feet wide and strikes parallel to the enclosing sedimentary rocks. Gold occurs as fine powder within the

quartz, usually in close association with less than 1% sulphides, mainly pyrite, chalcopyrite, galena and sphalerite.

The '31' vein is a series of irregular, continuous quartz lenses along the crest of a fold. It is similar to the Hump vein, except that the sulphides are not as plentiful. Gold assays are high but erratic. The H vein is exposed for a length of 110 feet and averages 15 inches in width. It has a gold content of 1.22 oz./ton and has quartz and sulphides similar to those of the Hump vein.

CURRENT WORK AND RESULTS

Development in 1974, which earned Discovery Mines Ltd. a 66 2/3% interest in the Camlaren property, included plant rehabilitation, dewatering of two old levels, and deepening the shaft from 380 feet to 840 feet. Two new levels were established at 600 feet and 800 feet, where the vein continues to exhibit dimensions similar to those on the upper levels. Diamond drilling probed the ore zone to the 1000-foot level.

Reserves were estimated at 56,000 tons grading 0.62 oz./ton Au. Because the deposit is open to a depth below the 1000-foot level and there are other relatively unexplored gold showings on the property, additional reserves could be developed.

GY AND JO CLAIMS
W.E. Bellis
C. Sanders
Yellowknife, N.W.T.

Gold
85 J/8
62°22'N, 114°31'W

REFERENCES

Henderson (1976).

PROPERTY

GY 1-14, JO 1

LOCATION

The property lies on the west shore of Yellowknife Bay, about 8 miles south of Yellowknife (12 Fig. 20).

HISTORY

The GY claims were staked in 1973 by C. Sanders and the JO claims in 1972 by W.E. Bellis.

DESCRIPTION

The area is underlain by metabasalts and metaandesites of the Yellowknife Supergroup intruded by metagabbro sills and irregular plutons.

CURRENT WORK AND RESULTS

Six trenches were excavated on the JO claims in 1973 and 4 trenches on the GY claims in 1974.

NOSE CLAIMS
Precambrian Shield Resources
9945 - 108 Street
Edmonton, Alberta T5K 2G6

Gold
85 J/16
62°55'N, 114°14'W

REFERENCES

Henderson (1976); Jolliffe (1939).

PROPERTY

NOSE 14, 15, 19, 20, 27, 28

LOCATION

The claims are 35 miles northerly of Yellowknife (13 Fig. 20). A winter road past the property has been used at various times.

HISTORY

Gunnex Ltd. staked NOSE 1-40 in 1964 and Precambrian Shield Resources Ltd. acquired mining lease Lot 913 Group 964 covering NOSE 14, 15, 19, 20, 27 and 28 in July 1972. NOSE 44-91 were staked in 1972 adjoining and to the northwest by Shield, but these have since lapsed.

Trenching, sampling, drilling and various surveys have tested the property. In 1965 Gunnex Ltd. drilled 6 holes totaling 948 feet on the No. 1 zone, and 9 holes totaling 1099 feet on the No. 2 zone. All were westerly directed and inclined. In addition an 833-foot hole explored both the No. 1 and No. 2 zones on NOSE 28. A 235-foot hole was drilled on NOSE 27, and a 201-foot hole explored the No. 4 zone.

The claims were assessed by geological surveys in 1964 and 1965, and magnetometer and IP surveys in 1965.

In 1967 Shield Resources Ltd. mined a 1141 ton bulk sample from the No. 1 zone. This was treated at Discovery Mine's mill and returned a grade of 0.423 oz./ton Au confirming previous chip sampling results and indicating a 70-foot long shoot grading 0.42 oz./ton Au to a depth of 25 feet on the No. 1 zone.

DESCRIPTION

The NOSE claims are underlain mainly by dacite flows with minor amounts of amphibolite gabbro, diorite, mafic flows, tuffaceous rocks and sediments. The volcanics and sediments belong to the Archean Yellowknife Supergroup. The wall rocks of the No. 1 and 2 zones are dacite flows but a 100-foot wide layer of northwesterly trending sediments outcrop approximately 200 feet south of the main exposure of the No. 1 zone, and about 150 feet east of the No. 2 zone. Slight folding is suggested by sinuous contacts.

The auriferous zones, which contain in places irregular masses and lenses of quartz with visible gold and sulphides, are not clearly defined veins.

CURRENT WORK AND RESULTS

By March 12, 1974, 3361 feet of drilling in 14 holes had tested the No. 1 and 2 zones. Eleven holes ranged from 400 to 436 feet in length, and 3 were less than 250 feet long. Work ceased at this stage.

CJ-IO PROPERTY
Anglo-United Development Corp. Ltd.
Suite 1905
7 King Street East
Toronto, Ontario

Gold
85 N/8
63°21'N, 116°18'W

REFERENCES

Lord (1942, 1951); Thorpe (1966).

PROPERTY

CJ 1-6, IO 1-6, 8-9, 11-16

LOCATION

The claims are near Camp Lake on the Snare River 75 miles northwesterly of Yellowknife (16 Fig. 20).

HISTORY

The property was staked in 1938 by the B & M Syndicate of Winnipeg as the 12 DELORO claims. After trenching that year on 3 zones east of Camp Lake the claims lapsed.

The ground, restaked as the CJ and IO claims in 1944 and 1945, was purchased by American Yellowknife Gold Mines who drilled 2015 feet in 20 holes. Snare River Mines Ltd. was incorporated in 1945 to acquire and develop the property and an additional 5348 feet of drilling in 20 holes was done in 1946.

In 1954 the assets of the company were purchased by Tarbell Mines Ltd. John Fortune acquired the claims in January 1959 and optioned them to Wayne Petroleums Ltd. who became the Anglo-United Development Corporation Ltd. in 1962. That Corporation drilled another 29 holes totaling 11,212 feet on the No. 1 and 2 zones, and 3123 feet in 15 holes on the South Zone. Precambrian Mining Services Ltd. supervised the drilling.

DESCRIPTION

The CJ-IO claims are underlain by metasediments, typically greywacke, of the Yellowknife Supergroup. Abundant nodular schistose greywacke, which alternates with non-nodular sections, may be derived from the more argillaceous beds but it is not known whether nodular and non-nodular sections can be correlated over any significant strike length. Megascopic examination suggests the nodules are clots of biotite and chlorite which would be a retrograde metamorphism. Mineralization may be mainly confined to the non-nodular sections.

The sediments strike 340° and generally dip steeply east with apparently conformable shear zones comprising numerous stringers of quartz ranging from 1/8 inch to 8 inches wide. These are mineralized with arsenopyrite, pyrite, pyrrhotite and minor sphalerite, galena and chalcopyrite both in the quartz stringers and the adjoining greywacke. The quartz is not abundant enough to be described as a stockwork and does not form large bodies. Shearing is not strongly developed and the mineralized zones are probably sulphide rich metasediments with quartz stringers. The No. 2 zone lies approximately 100 feet east and extends north of the No. 1 zone. The South Zone lies about 500 feet south-southeast of zones 1 and 2.

Drill indicated ore shoots averaging 4 feet wide and 0.65 oz./ton Au have been defined to a depth of 450 feet over a length of 100 feet in the No. 1 zone, and a length of 500 feet in the No. 2 zone. The tonnage that might be obtained by a lower cutoff and increased mining width has not been stated but as the property may be flooded on completion of the Strutt Lake Power Project, an underground operation would be required.

CURRENT WORK AND RESULTS

Eighteen holes totaling 4834 feet were drilled to test the ground lying between the No. 1 and 2 zones, the South Zone and the area at the south end of the South Zone. Most of the holes were inclined at 50° on an azimuth of 250° and were 50 to 200 feet apart.

GOD CLAIMS
Nemco Exploration Ltd.
534 789 West Pender Street
Vancouver, B.C.

Gold
85 O/1
63°04'N, 114°04'W

REFERENCES

Jolliffe (1939).

PROPERTY

GOD 1

LOCATION

The claim lies just north of Goodwin Lake, 40 miles north-northeast of Yellowknife (14 Fig. 20). A winter road to Discovery Mine from Yellowknife crosses Goodwin Lake.

HISTORY

The claim was staked for C. Vaydik in 1972.

DESCRIPTION

The claim is underlain by a northwest trending tongue of Yellowknife Supergroup sediments intruded and enclosed by diorite which contains quartz veins.

CURRENT WORK AND RESULTS

The quartz veins were sampled during a geological evaluation. An 8-inch wide vein, exposed in a trench, gave the best assay: 0.4 oz./ton Au and 0.36 oz./ton Ag.

MAG CLAIMS
Seaforth Mines Ltd.
600 789 West Pender Street
Vancouver, B.C. V6C 1H7

Gold
85 0/3
63°05'N, 115°26'W

REFERENCES

Lord (1942, 1951)

PROPERTY

MAG 15

LOCATION

The MAG claims are located at Mosher Lake approximately 50 miles northwest of Yellowknife (15 Fig. 20). Boats can enter Russell Lake from Great Slave Lake and travel to within 6 miles of the property.

HISTORY

The 19-claim MAG group covers a gold discovery made by Alex Mosher in 1938, and was staked as the 21-claim CORINNE group. After the CORINNE claims had lapsed the ground was restaked by the Yellowknife Mining Syndicate, from which Huhill Yellowknife Mines Ltd. acquired the 16-claim ROSE-MONTY-HILL group. The Gold Island showing on MAG 15 is at the common claimpost of the old ROSE 1, 2, 3 and 4 claims.

A few shallow drill holes completed in 1944 were followed in 1946-47 by 40 holes comprising 14,023 feet drilled by Huhill Yellowknife Ltd. The claims were then allowed to lapse and although the ground has been restaked at various times, the only work until 1973 had been a few trenches.

The 19-claim MAG group was acquired by Seaforth Mines Ltd. and evaluated by consultants in 1973 for Northern Mineral Exploration Assistance. Except for test VLF, EM and magnetometer surveys, this evaluation was mainly a compilation of previous reports.

DESCRIPTION

On the MAG group, greywacke of the Yellowknife Supergroup contains an auriferous quartz stockwork that is exposed for about 120 feet on Gold Island where it strikes north-northwest. It has been traced about 750 feet by diamond drilling. A small amount of pyrrhotite, pyrite, chalcopyrite, arsenopyrite and carbonate accompanies the gold mineralization.

CURRENT WORK AND RESULTS

Three BQ size diamond drill holes totaling 943 feet gave assay results lower than those anticipated from earlier records. Best results were 0.19 oz./ton Au over a 33-foot intersection in Hole 74-01 and 0.23 oz./ton across 19 feet in Hole 74-03. No assay in Hole 74-02 exceeded 0.03 oz./ton Au.

The gold-bearing stockwork has irregular contacts and dimensions and zones with higher gold values cannot readily be correlated from hole to hole.

MOS CLAIMS
Giant Yellowknife Mines Ltd.
Yellowknife, N.W.T.

Gold
85 0/4
63°05'N, 115°27'W

REFERENCES

Lord (1942).

PROPERTY

MOS 1-2

LOCATION

The MOS claims are at the south end of Mosher Lake about 50 miles northwest of Yellowknife (15 Fig. 20). Boats can enter Russell Lake from Great Slave Lake and travel to within 6 miles of the claims.

HISTORY

The ground was first staked in 1944 as the WAYNE claims by the Yellowknife Bay Exploration Syndicate who had 30 trenches excavated during the next few years. In 1947, 16 x-ray holes totaling 922 feet were drilled but as the best assay obtained was 0.157 oz./ton Au the claims were allowed to lapse.

The ground was restaked as the JST claims in 1960 for Giant Yellowknife Mines Ltd., who excavated 24 trenches. The highest assay value reported from these trenches was 0.23 oz./ton Au across 4 feet and the claims again lapsed.

MOS 1 and 2 were recorded in 1971 by N.J. Byrne to cover the showings, and claims MOS 3 and 4 were added immediately to the east a year later. Six trenches totaling 28 cu. yds. of excavation were completed in 1972.

The main incentive for exploration is the widespread nature of the low grade gold mineralization in volcanic rocks which form a ridge above the enclosing sediments. Such a low grade deposit, if large enough, would be amenable to low cost open pit mining.

DESCRIPTION

A quarter mile wide belt of volcanics forms a northeast striking ridge on the property. This ridge is part of a wider volcanic belt striking northeasterly from the north end of Mosher Lake. The MAG group, a mile to the west in the centre of Mosher Lake, lies on the line of projection of this volcanic belt.

The volcanics, mainly intermediate to mafic in composition, comprise massive, pillowed and schistose varieties with the mineralized zone lying between the schistose and massive units.

The mineralized zone dips steeply northwest and gives rise to rusty outcrop. Pyrrhotite, pyrite and arsenopyrite are present and quartz stringers lie parallel to the bedding.

Recent drill logs describe considerable footage as "banded tuffaceous volcanics". Some pegmatitic and gneissic granite, minor lapilli tuff, graphitic siltstone and diabase dikes are also described. Gold values are widespread but low.

CURRENT WORK AND RESULTS

In 1974 5458 feet of drilling in 18 holes delineated a 12-foot wide mineralized zone over a length of 1100 feet and to a depth of 200 feet. Average grades are 0.13 oz./ton. Taking lower grade material, a 57-foot wide zone grading 0.07 oz./ton Au is indicated.

WOLF CLAIMS
Terra Mining and Exploration Ltd.
Suite 204
8631 - 109 Street
Edmonton, Alberta

Gold, Silver
85 P/1
63°10'N, 112°25'W

REFERENCES

Moore *et al.* (1951); Thorpe (1972).

PROPERTY

WOLF 1-12

LOCATION

The claims, near Spencer Lake, are approximately 80 miles northeast of Yellowknife (17 Fig. 20).

HISTORY

WOLF 1-12 were staked for Terra Mining and Exploration Ltd. in 1966. In 1968 10 holes totaling 795 feet were drilled on the main mineralized zone which is on WOLF 9 and 10. A number of trenches have also been excavated. The highest gold assay obtained was 0.03 oz./ton across 36 inches.

DESCRIPTION

The claims are underlain mainly by intermediate volcanic rocks and some silicious volcanics. Silicious intrusive rock is reported in some of the drill holes.

Narrow quartz veins, mineralized with pyrite, pyrrhotite and low gold-silver values are exposed in the northerly striking main zone, 250 feet east of the western boundaries of claims WOLF 9 and 10.

Dips of the northerly striking foliation are steep to the west, or vertical. Drilling carried out at -45° inclination in a westerly direction suggests that the mineralized zone may not lie in the foliation. The correlation of mineralization intersected in drilling with that in the trenches is not obvious. Some much higher gold values are reported from trenches than those obtained from drill hole intersections.

CURRENT WORK AND RESULTS

During August 1974, VLF EM and magnetometer surveys over a grid area in the centre of the claim block, covered the 'main zone'. A one inch to 50 foot map was prepared showing the results of geological mapping done in 1966, together with trench locations, sampling and assay data.

A weak VLF EM anomaly and a positive magnetic anomaly coincide at one locality with higher gold values recorded from trench samples. The main zone is coincident with a positive magnetic anomaly over much of its length.

A second EM anomaly was recorded immediately east of the main zone.

SILVER DOG CLAIMS

W.J. Humphries

Box 1856

Yellowknife, N.W.T.

Gold, Silver

85 P/3

63°13'N, 113°04'W

REFERENCES

Henderson (1941); Moore *et al.* (1951).

PROPERTY

SILVER DOG 1-2

LOCATION

The claims lie near Gordon Lake, approximately 70 miles northeast of Yellowknife (18 Fig. 20), and are near the route of a winter road.

HISTORY

The ground was held in 1937 as part of the 20-claim MAC group, then as PIT 1-4, and later as part of the 28-claim ML group, staked by J. Lundquist of Yellowknife in 1946. C. Snyder acquired 23 of these claims prior to 1950 and the remainder lapsed. In 1950 trenching and sampling followed a magnetometer survey. SILVER DOG 1 and 2 were staked by W.J. Humphries in 1974 on ground previously covered by parts of claims ML 25-30.

DESCRIPTION

The claims are underlain by northeast striking, isoclinally folded metasediments of the Archean Yellowknife Supergroup. Northeast striking quartz veins and shear zones, mineralized with arsenopyrite, pyrite and traces of galena, sphalerite, chalcopyrite, bornite and stibnite, carry narrow widths of low gold-silver values. The best gold values recorded on the ML claims were 0.21 oz./ton across 1 foot, and 0.12 oz./ton across 5 feet. Silver values are locally high compared with those normally found in gold showings in areas underlain by Yellowknife Supergroup rocks. The best recorded were 5 feet of 0.7 oz./ton Au and 22.88 oz./ton Ag in a trench. High silver values and the possibility of continuity of mineralization beneath overburden have been the main incentives for continued interest in this property.

CURRENT WORK AND RESULTS

Detailed mapping and prospecting was done during June and July 1974.

VEN CLAIMS
Prosper Mines Ltd.
506 Cambridge Building
1024 Jasper Avenue
Edmonton, Alberta

Gold, Silver
85 P/6
63°18'N, 113°02'W

REFERENCES

Moore *et al.* (1951).

PROPERTY

VEN 1-12

LOCATION

The claims lie 90 miles northeast of Yellowknife (19 Fig. 20).

HISTORY

Claims VEN 1-12 were staked for Prosper Mines Ltd. in 1973. Several trenches on the mineralized zone, drilled in 1974, date back to an earlier period of exploration, possibly as far back as 1947 when the ground was staked as the JEAN, CROSS, STAR and BARBARA-JEAN claims.

DESCRIPTION

A zone of northwesterly striking, easterly dipping, gold bearing quartz veins is enclosed in greywackes of the Yellowknife Supergroup.

CURRENT WORK AND RESULTS

During September 1974 282 feet of diamond drilling in 6 holes tested a mineralized zone on the southwest part of VEN 5. The best intersection in hole P-3, assayed 0.65 oz./ton Au across a width of 6.5 feet, with a 1.5 foot section grading 2.4 oz./ton Au, 9.7 oz./ton Ag, 3.4% Pb, 0.75% Zn. Values generally were much lower. The next best intersection was 0.25 oz./ton Au across approximately 10 feet.

COLOMAC DYKE DRILLING PROJECT
Cominco Ltd.
200 Granville Square
Vancouver, B.C.

Gold
86 B/6
64°25'N, 115°05'W

REFERENCES

Lilge (1947); Lord (1951); Stanton (1947); Thorpe (1972); Wilson and Lord (1942).

PROPERTY

IF 1-2
DID 1-12
BOB 1-24
WHY 1-3
GI 1-16, 25-28

LOCATION

The property is at Baton Lake, informally known as Long Lake, about 135 miles northwesterly of Yellowknife, and about 30 miles northeasterly from the north end of Indin Lake.

HISTORY

Gold was discovered in quartz-albite dykes in the Indin Lake area in 1945 and since then the Colomac and Goldcrest dykes have been staked or acquired by a number of different companies.

The Colomac dyke was first covered by 20 claims held by Indian Lake Gold Mines and 24 adjoining claims held by Colomac Yellowknife Mines Ltd. The mineralized zone extends across both holdings. Diamond drilling began on the properties in late 1945 and by November 1946, 47,000 feet had been done as had prospecting, geological mapping and 2500 feet of drifting.

The Goldcrest dyke was originally covered by 21 AE claims staked in 1945 for Goldcrest Mines Ltd. A 2000-foot length of the dyke was tested to a depth of 400 feet by 8500 feet of drilling in 29 holes which indicated 1,280,000 tons averaging 0.144 oz./ton Au. Trenching and 3500 feet of drilling explored other parts of the claims.

Goldcrest dropped the claims in the early 1960's.

In 1959 Colomac Mines Ltd. and Indian Lake Gold Mines Ltd. were absorbed by Hydra Explorations Ltd. Discovery Mines Ltd. were granted a 5-year purchase option in 1968 and then staked 24 adjoining claims over what had been the AE claims of Goldcrest Mines. In 1968 a preliminary feasibility study concluded that open pit mining would be feasible, given a gold price of \$80/oz. and a production rate of 3000 tons per day.

In 1971 Discovery Mines Ltd. and Hydra Explorations Ltd. amalgamated their claims and formed Johnsby Mines Ltd. a private company in which they each hold a 50% interest.

The Northern Miner August 3, 1972 reported that the Johnsby Mines Ltd. property contained 15 million tons of material averaging \$2.40/ton at \$35 gold, based on drilling results or 13 million tons of \$3.00/ton rock at \$35 gold based on underground sampling.

DESCRIPTION

Thorpe (1972) reports that the Colomac dyke is a north striking quartz-albite sill or dyke, traceable for 20,000 feet in volcanic rocks of the Yellowknife Supergroup. The sill lies just west of Baton Lake and is parallel to the east contact of a wider sill-like body of gabbro that ranges from 700 to 1700 feet wide. In a report by J.W. Platt for Discovery Mines Ltd. (1968) the quartz-albite sills constituting the Colomac 'Dyke' and the sub-parallel Goldcrest 'Dyke' are termed quartz diorite porphyry.

The Colomac Dyke, which lies on the east or hanging wall side of the gabbro dips 60° to the east and varies from 70 to 240 feet in width.

The Colomac Dyke has 3 mineralized sections; one located 3/4 mile north of Baton Lake, another just east of the north end of Baton Lake, where the underground work and most of the drilling has been concentrated, and the third about one mile farther south.

The mineralized sections contain 3% to 5% sulphides, mainly pyrite and pyrrhotite, and typically as much as 2% magnetite. Visible gold is associated with quartz veining or fine pyritic fractures cutting quartz. The dyke consists largely of quartz, as much as 70%, with albite and around 5% chlorite. There are also thin seams and veins of quartz, some as much as 8 feet wide in the mineralized sections. Veinlets of sugary quartz contrast with possibly later more massive quartz.

The northeast striking and east dipping Goldcrest Dyke has been traced for 5000 feet and is up to 200 feet wide. It lies about 1/2 mile west of the central part of Baton Lake, near the west margin of the gabbro dyke. Gold values are concentrated mainly on the footwall side of the dyke, and are encountered in a 2000-foot strike length.

CURRENT WORK AND RESULTS

In 1974 the results of the previous drilling in which EX equipment was used to obtain .84-inch diameter core was checked with BQ equipment, to provide a more representative 1.4-inch diameter core. The first two holes were drilled parallel to and 5 feet above and below the older, western inclined holes, IL-4 and C-6, which were collared near the hanging wall of the dyke. Vertical holes were sited nearby and all other holes in the 1974 program were vertical.

When the core was logged the frequency and orientation of quartz veins were recorded and the different types of quartz veins were sampled and their gold content compared with that of adjoining wall rocks. The core was photographed for record.

About 10,000 feet of diamond drilling in 20 holes covered a strike length of 2000 feet. Based on this work, Discovery Mines Ltd. claimed in their 1974 annual report, a potential in excess of 20,000,000 tons of 0.053 oz. ore to a depth of 1000 feet. Much of the deposit is suitable for open pit mining.

FN, RISS CLAIMS
F. Lafferty

Gold
86 B/6
64°27'N, 115°15'W

REFERENCES

Lord (1942).

PROPERTY

FN 1-12, RISS 1-12

LOCATION

The RISS claims lie on the east side of Riss Lake and FN claims on the north end of Nautilus Lake, about 128 miles northwest of Yellowknife.

HISTORY

The RISS claims were originally staked as the RIS group. In 1945 Ingray Yellowknife Mines Ltd. acquired the property and several gold bearing shear zones were uncovered. In 1976 the ground was restaked as the RISS claims and the FN claims were staked.

DESCRIPTION

The area is underlain by metavolcanics and metasediments of the Yellowknife Supergroup which are cut by gold bearing shear zones.

CURRENT WORK AND RESULTS

Trenches were blasted on the claim groups.

MM CLAIMS
Precambrian Shield Resources Ltd.
11th Floor
9945 - 108 Street
Edmonton, Alberta T5K 2G6

86 H/2
65°15'N, 112°57'W

REFERENCES

Allan *et al.* (1973); Allan, Cameron *et al.* (1973); Bostock (1976); Craig (1960); Fraser (1964).

PROPERTY

MM 2-19

LOCATION

The claims are near Point Lake, about 200 miles northerly of Yellowknife.

HISTORY

The claims were staked for Precambrian Shield Resources Ltd. in 1974 on gold-silver mineralization in shear zones, near the contact of volcanic and sedimentary rocks. The showing had been noted during a 1972 reconnaissance by J.D. Curry of Precambrian Shield Resources Ltd.

DESCRIPTION

The northeastern third of the claim block is underlain by metavolcanics, commonly pillowed; the remainder of the claim is underlain by metasediments.

CURRENT WORK AND RESULTS

Soil and rock samples, taken from two linear depressions, assumed to be shear zones near volcanic-sedimentary contacts, were analysed for Cu, Pb, Zn and As. Geochemical anomalies inferred from this work were surveyed with magnetometer and EM equipment but well defined EM conductors were not located. The geochemical and magnetic anomalies are caused by sulphide mineralization and diabase dykes. Significant gold assays were not obtained from the property.

CORONATION GULF-JAMES RIVER AREA

A number of wide ranging exploration efforts have covered parts of the Coronation Gulf-James River district (Fig. 21). These include Kenarctic's 1955 to 1957 work in the James River concession which covered the conterminous parts of 76 M/2, 3, 6, 7, 10 and 11 (67°N to 67°45'N and 110°45'W to 111°15'W). Geological mapping, airborne and ground EM and magnetometer surveys culminated in the discovery in 1955 and drilling, during 1956 and 1957, of the High Lake copper deposit, to the north in 76 M/7.

Other work in the region included: geological mapping and drilling on the Low Lake property in 1957 by Pan American Ventures; geological mapping, geochemical sampling and trenching mouth of the James River by Harron's Development Ltd.; and geological mapping, IP and ground EM surveys in the northwest corner of 76 M/2 by Polar Star Mines in 1969.

Gold was discovered on the Arctic Coast, just south of Grays Bay in 1963 (Schiller 1965) and a number of companies explored the area in the following years.

The Mollie Mac Mines-Oakwood Petroleum group explored NTS 76 M/2 and M/3 under Prospecting Permits 270 and 271 in 1971-72 and located massive base metal sulphides and some polymetallic vein type deposits.

An extensive and irregular belt of Archean volcanic rocks (Fraser 1964) extends southerly from Coronation Gulf in 76 M/14 and M/15. Little work has been done in this belt by government geologists and published information is scanty. Within the High Lake area (Padgham, Jefferson *et al.* 1974) the belt is predominantly felsic and intermediate in composition and these rocks are reported to extend farther south into 76 M/2. More mafic material may occur in the volcanic pile farther to the west.

Massive volcanogenic sulphides, epigenetic polymetallic sulphide veins, and minor gold occurrences are found throughout the volcanic belt, but the more promising gold veins cut the crystalline rocks that probably intrude the volcanic pile to the west.

Access to this remote area is normally by fixed wing aircraft as suitable lakes and rivers abound. For a short period in late summer and fall, barge or ship service through Coronation Gulf links the area with the Delta communities of Tuktoyaktuk and Inuvik, but as there are no roads and the terrain is rugged this service is of limited value.

PROSPECTING PERMIT 336
Long Lac Mineral Exploration Ltd.
Suite 821
602 West Hastings Street
Vancouver, B.C.

Lead, Zinc, Copper
76 L/4
66°07'N, 110°45'W

REFERENCES

Bostock (1976); Fraser (1964).

PROPERTY

Prospecting Permit 336

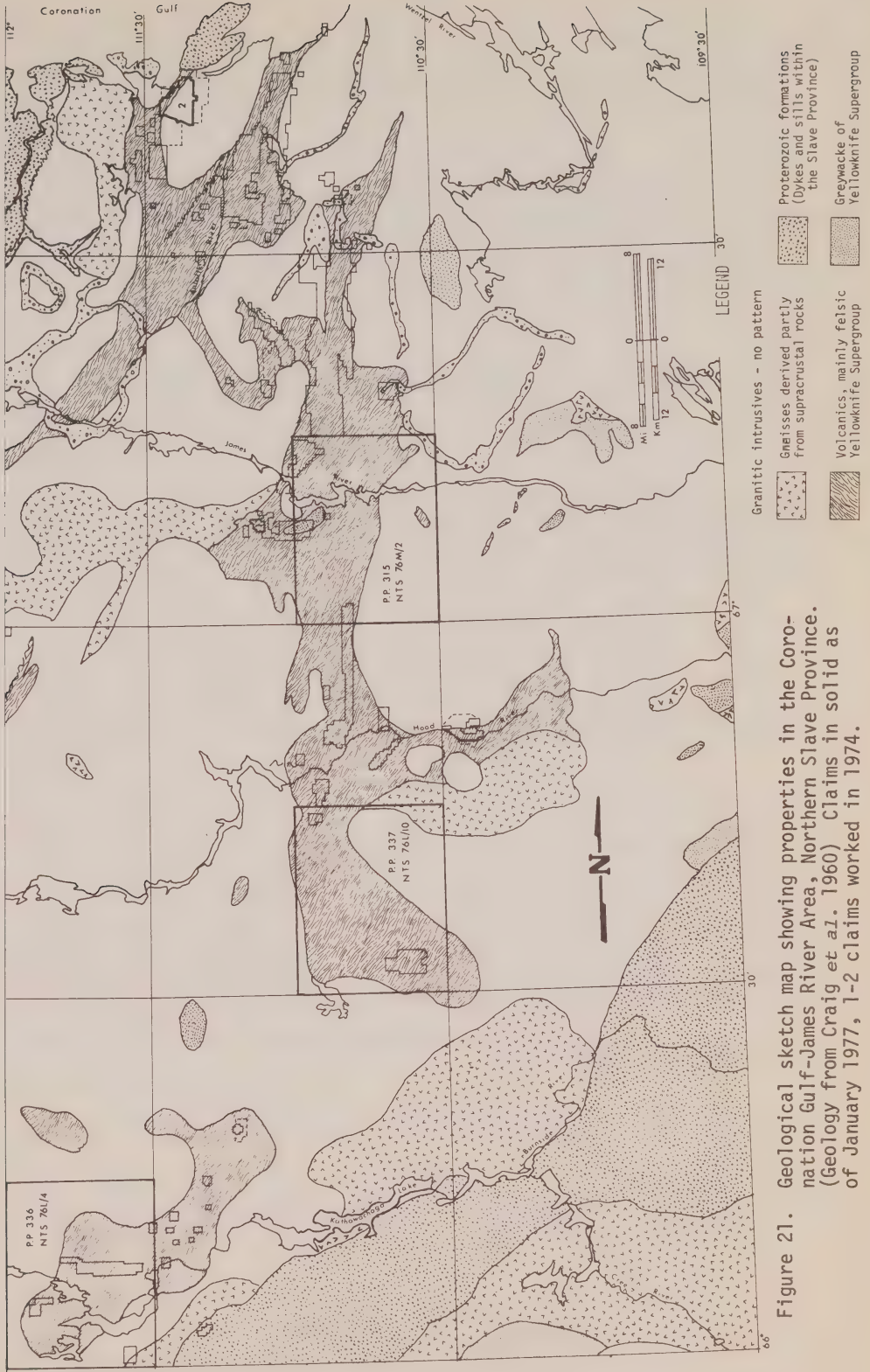


Figure 21. Geological sketch map showing properties in the Coronation Gulf-James River Area, Northern Slave Province. (Geology from Craig *et al.* 1960) Claims in solid as of January 1977, 1-2 claims worked in 1974.

LOCATION

Prospecting Permit 336 covers an area 265 miles northeasterly from Yellowknife (Fig. 21).

HISTORY

Borealis Exploration Ltd. held 76 L/4 under permit from 1968 to 1970. Prospecting included geological mapping at one inch to one half mile in 1968, and a helicopter-borne EM, magnetometer, gamma ray spectrometer survey in 1969. Ground EM and magnetometer surveys and prospecting found magnetite and minor iron sulphide in a diabase dike. Prospecting Permit 336 was granted to Long Lac Mineral Exploration Ltd. in 1974.

DESCRIPTION

The permit area is underlain by supracrustal rocks, predominantly intermediate metavolcanics with lesser amounts of mafic and felsic metavolcanics, mainly in the north and southwest respectively. A belt of metasediments, as much as one half mile in width, extending along the southern margin of the volcanics is segmented by intrusive granitic rock. Small roof pendants of metasediments are present in the granitic rocks to the south. Granitic rocks underlie large areas on the north and west sides of the area. Exhalative sediments, including quartz-magnetite iron formation, carbonate and carbonate cemented rhyolite breccia and agglomerate have developed in places along the sediment volcanic interface.

The supracrustal rocks are enclosed to the north, south and west by granitic rocks. The structure, believed to be complex, is provisionally interpreted as a steeply dipping south facing isoclinally folded succession. This implies a sequence from mafic to felsic volcanism with exhalative sediments capping the felsic volcanics. Alternations of rhyolite, dacite and andesite, occurring in the central part of the volcanic belt, could be due either to repetition by folding or cyclical volcanism.

A number of gossans and two small gabbro intrusives occur in the area mapped.

CURRENT WORK AND RESULTS

During the summer of 1974 about a third of the permit was mapped.

Several gossan zones were observed and one, at Dogbone Lake in the central part of the mapped area, was selected for geochemical till sampling. This survey yielded anomalous values for lead, zinc and copper. Sphalerite and galena were found in frost-heaved rubble near Dogbone Lake.

The area around Pogo Lake at the southwest end of the volcanic belt was prospected and sampled.

PROSPECTING PERMIT 337
Long Lac Mineral Exploration Ltd.
Suite 821
602 West Hastings Street
Vancouver, B.C.

Silver, Copper, Zinc
76 L/10
66°37'N, 110°45'W

REFERENCES

Fraser (1964).

PROPERTY

Prospecting Permit 337

LOCATION

The area covered by Prospecting Permit 337 is 305 miles northeasterly from Yellowknife (Fig. 21).

HISTORY

From 1968 to 1970 Borealis Exploration Ltd. held 76 L/10 under permit. That company prospected and geologically mapped the area at one inch to one half mile in 1968, and surveyed it with helicopter-borne EM, magnetometer and gamma ray spectrometer equipment in 1969. Ground geophysical surveys followed in 1970.

Permit 337 was granted to Long Lac Mineral Exploration Ltd. in 1974.

DESCRIPTION

Area 76 L/10 is underlain by a belt of supracrustal, mainly metavolcanic, rocks which form an arc concave towards granitic rocks in the northeast (Fig. 21).

Massive and pillowed mafic volcanics predominate on the inner side of the arc. Westward and southward towards the margins of the metavolcanic belt, intermediate and felsic volcanics, and metasediments with subordinate exhalative sediments, predominate. The change from mafic volcanics to felsic volcanics and sediments is not a regular progression. Lenses of one rock type frequently occur in another which may be in part the result of complex folding. Lens-like bodies of coarse grained gabbro, up to 5 miles in length, may in some cases be the intrusive equivalents of the mafic volcanics. Exhalatives, mainly carbonate sediments with minor quartz-magnetite iron formation, occur locally at the volcanic sedimentary contacts. Granitic rocks underlie the northeast part of the permit, parts of the western edge and areas near the southern boundary.

CURRENT WORK AND RESULTS

Geological mapping covered about three quarters of the permit. Gossans in the northwest and southeast parts of the mapped area were prospected.

Best assays of grab samples from the Long Lake showing in the northwest part of the area were 5 oz./ton Ag, 0.8% Cu and 2% Zn. Samples taken from a sediment amphibolite contact where the rocks contain as much as 20% arsenopyrite with fine grained pyrite and pyrrhotite assayed 0.07 oz./ton Ag.

PROSPECTING PERMIT 315
Great Plains Development Company of Canada Ltd.
736 8 Avenue, S.W.
Calgary, Alberta T2P 1H4

76 M/2
67°07'N, 110°45'W

REFERENCES

Fraser (1964); McGlynn (1971); Padgham, Jefferson *et al.* (1974).

PROPERTY

Prospecting Permit 315

LOCATION

The Permit area is 350 miles northeasterly of Yellowknife (Fig. 21).

HISTORY

Permit 315 was granted jointly to Great Plains Development Company of Canada Ltd. and Rio Tinto Exploration Ltd. in 1974.

DESCRIPTION

Roughly a quarter of the area is underlain by granite and granodiorite; the remainder by metavolcanic and metasedimentary rocks in approximately equal proportions. In the central part of the area, lenses of felsic and intermediate volcanics, over a mile in width and up to three miles long, are enclosed in metasediments, mainly black slate and greywacke.

Strikes are generally slightly east of north, however indications of complex folding are reported. No observations on bed facings have been made but a cherty unit interpreted as overlying a mafic to felsic volcanic cycle indicates that the beds are younger to the east. In view of the apparent complexity of the structure this conclusion is presumably of local significance.

Gossans are most abundant in the northwestern part of the Permit area which is considered to be a possible centre of volcanism as suggested by the local increased thickness of pyroclastics.

The High Lake area, 76 M/7, immediately to the north was mapped in 1973 (Padgham *et al.* 1974).

CURRENT WORK AND RESULTS

The geology of most of the Permit was mapped at one inch to one half mile in 1974. The unmapped portion is probably underlain by granitic rocks. Prospecting and sampling explored favourable rock types and gossans.

OP CLAIMS
Texasgulf Incorporated
P.O. Box 175
Commerce Court
Toronto, Ontario M5L 1E7

Copper, Zinc
76 M/3
67°11'N, 111°03'W

REFERENCES

Craig *et al.* (1960); Padgham, Jefferson *et al.* (1974).

PROPERTY

OP 1-20

LOCATION

The OP claims cover the Canoe Lake base metal sulphide showings just south of the James River, 320 miles northeasterly of Yellowknife (1 Fig. 21).

HISTORY

The OP group was staked by Oakwood Petroleum Ltd. in 1973 prior to the expiration of Prospecting Permits 270 and 271 which covered NTS 76 M/2 and 76 M/3. The area had previously been included in Kenarctic Exploration Ltd.'s James River concession.

DESCRIPTION

The Canoe Lake area is underlain by felsic volcanics, presumably an extension of the belt which contains the High Lake copper deposit which lies 20 miles to the north-northeast. The geology of the belt is poorly known as the only published map was made by widely spaced helicopter traverses (Craig *et al.* 1960). Recent work in adjacent areas suggest this volcanic belt contains a much higher percentage of felsic volcanics than is suggested by the published map (Padgham, Jefferson *et al.* 1974).

CURRENT WORK AND RESULTS

In 1973 Texasgulf drilled holes 498, 348, 564 and 567 feet long, all inclined at about 45° to test the Canoe Lake copper-zinc showing. Felsic volcanics were intersected throughout the holes and many sections were assayed.

ARCADIA PROPERTY
Giant Yellowknife Mines Ltd.
Yellowknife, N.W.T.

Gold
76 M/11
67°42'N, 111°27'W

REFERENCES

Fraser (1964); Schiller (1965); Padgham *et al.* (1976); Thorpe (1966, 1972).

PROPERTY

H 1-50, 56 P, 45 Q, 45 R, X 1-7 and 18 unnamed claims

LOCATION

The property, approximately 375 miles northeasterly of Yellowknife and 10 miles southwest of Grays Bay, extends almost to the Arctic Ocean shore (2 Fig. 21). A rough trail, passable to tracked vehicles, extends from the seashore inland to the 1974 drilling camp.

HISTORY

A general account of the history of the Arcadia Property is presented in the 1973 Mineral Industry Report (Padgham *et al.* 1976). The X claims were staked in 1973 by K. Rasmussen, who transferred a 50% interest to Bruce Weaver. Arcadia Explorations Ltd. acquired this claim in 1974. The Q and P claims were staked in 1972, and after various changes of ownership, were transferred to Arcadia Explorations Ltd. in 1974. The H claims were staked in 1963 by G. Bruce and transferred to Consolidated Manitoba Mines Ltd. in 1964. In 1972, after the latter had been declared bankrupt, the claims were transferred to James Brady, by the trustee, and after various changes of ownership were transferred to Arcadia Explorations Ltd. in February 1974.

In 1973, having consolidated most of the various properties (2 Fig. 21) covering the Sidewalk, East Boundary and North veins and some other showings under a single ownership, Arcadia Exploration Ltd. prospected, and drilled two holes, 60 and 39 feet in length on the East Boundary vein, and a 70-foot hole on the North vein. Giant Yellowknife Mines Ltd. optioned the property and conducted the 1974 drilling program.

A number of the claim blocks have been taken to lease. H 1-50 are covered by Lot 74 of lease 1316, and the 18 unnamed claims are Lot 75 of lease 1316. By 1975 14 P, 22 Q, and 39 R claims had lapsed.

DESCRIPTION

The Sidewalk vein, which is covered by the P 16, 22, 28, 34 and unnamed claim N50015 claims, strikes northeast in metavolcanics of felsic to mafic composition. The true width of the quartz vein, in the section drilled in 1974, ranges from about 12 to 20 feet, with gold values being restricted to relatively short intersections within otherwise barren vein material.

The North vein, which is covered by P 18, 23, 24, 29, 35, 56, Q 43, 49, X 1 and H 1 strikes northeast, dips steeply to the northwest and cuts across granitic rocks. In the majority of holes true vein thicknesses are between 5 and 10 feet and gold is usually accompanied by pyrite, minor galena and locally, chalcopyrite.

CURRENT WORK AND RESULTS

A 120-foot length of the Sidewalk vein was tested by 9 holes totaling 1425 feet. The North vein was tested by 2322 feet of drilling in 34 holes spaced over a strike length of 2050 feet.

Assay results released indicate that the range of gold values encountered agree fairly well with previous results.

Part of the property was taken to lease in 1974 as Lots 74 and 75 Group 1316.

BASE METALS EXPLORATION IN THE SLAVE PROVINCE

During the late 1960's and early 70's many of the volcanic belts in the southern half of the Slave Province were explored for base metals. Numerous volcanogenic polymetallic sulphide occurrences or deposits were found but grades and tonnages have been disappointing and interest has shifted northwards. In 1974 work was concentrated in the Hackett-Back River area, described in the next section. All other base metal exploration in the Slave Province except that discussed in the previous section on the Coronation-James River area, is described immediately below.

DALE AND TIN GROUPS
Initiative Explorations Ltd.
Indian Mountain Metal Mines Ltd.
1601, 8 King Street, E.
Toronto, Ontario M5C 1B5

Copper, Zinc
75 M/2
63°08'N, 110°57'W

REFERENCES

Henderson (1944); Heywood and Davidson (1969); McGlynn (1971).

PROPERTY

DALE 1-46; TIN 1-7

LOCATION

The claims are on the west side of Brislane Lake, 120 miles northeast of Yellowknife (1 Fig. 20).

HISTORY

Part of the area now covered by the DALE and TIN groups was staked as the L, H, and Z claims in 1947. In 1948 discovery of the BB Lake deposit 6 miles to the south stimulated staking in the Indian Mountain Lake area. Parts of the property have been staked at various times as the VOY, MASON, VH, RB, MH (1949-52), the DAWN, BORNITE, GEM, NEW JOY, HO, TAG and MACFIE (1957), the GEM, STAR, STAR, SOLO, DAWN, OMF, and HO (1966).

Trenching and several thousand feet of diamond drilling in the period 1948-49 (McGlynn 1971 p. 68) are inadequately documented. Mount Wright Mines optioned the ground in the early 1950's and drilled two zones of copper mineralization.

The property was optioned by Hirshorn interests from McAvoy interests during 1965-66 and mapping, geophysics and diamond drilling were done.

The ground came open in 1973 and the DALE group was staked for Indian Mountain Metal Mines and Initiative Explorations Ltd. in December and the TIN claims were located for the same companies in May 1974.

DESCRIPTION

The western part of the DALE group is underlain by Archean mafic flows and pyroclastics in the core of a north striking anticline. Felsic volcanics occupy the central and eastern part of the claim block and sediments

underly a small area along the shore of Brislane Lake. A quartz-feldspar porphyry intrudes the rocks on the southern margin of the claim block. A major fault striking northeast through a chain of lakes in the northwestern part of the claim block, has a large right lateral component of movement. Schistosity with a strike similar to that of the volcanic layering may be seen at several locations on the claims.

Mineralization favors schistose layers in the volcanics with the copper, a chalcopyrite-pyrrhotite assemblage, in garnetiferous parts of the felsic and intermediate volcanics. There are two chalcopyrite-pyrrhotite showings on the western part of the claims.

A northern-zinc-zone comprises pyrite and sphalerite with silver bearing minerals in flows of more felsic composition.

CURRENT WORK AND RESULTS

During 1974 work included horizontal loop EM and VLF-EM surveys, geological compilation and 14 holes totaling 5228 feet, drilled mainly in the northern part of the claim block.

BAY GROUP
Cleaver Lake Mines Ltd.
2625 Landsdowne Road
Victoria, B.C. V8W 1M9

75 M/12
63°33'N, 111°57'W

REFERENCES

Henderson (1944); Padgham, Kennedy *et al.* (1975).

PROPERTY

BAY 1-36

LOCATION

The BAY claims lie approximately 110 miles northeast of Yellowknife in the southern part of the Warburton Bay area (II Fig. 20 p. 103). The old winter road to Tundra Mines crosses Lockhart Lake, nearby to the west. The SAN, HART and MAT claims are adjacent to the south.

HISTORY

The BAY claims were staked for J.D. Larkin in 1970 and transferred to Cleaver Lake Mines in May 1971.

During 1971, reconnaissance EM and geological surveys were followed by detailed EM and magnetometer surveys of selected areas. In July 1971, detailed geological and geochemical surveys of an area of EM anomalies outlined four geochemical anomalies coincident with magnetic and EM anomalies.

DESCRIPTION

The property covers part of a narrow belt of sheared and folded mafic to intermediate flows and pyroclastics. Shear zones are reported to contain massive to disseminated pyrrhotite and pyrite, with a little chalcopyrite. Magnetite is locally present as are quartz veins with disseminated pyrite

and unmineralized carbonate veins.

The major zones of shearing border stratabound EM conductors which strike about 030°.

CURRENT WORK AND RESULTS

A 360-foot long diamond drill hole bearing northwesterly at minus 40° was sited near the centre of the southern margin of BAY 16. It intersected amphibolite, felsic volcanics and two sulphide zones 9 and 7 feet wide. The best mineralization assayed 0.14% Cu over less than 2 feet.

CO CLAIMS
Great Plains Development Co. of Canada Ltd.
715 5 Avenue, S.W.
Calgary, Alberta T2P 2X7

76 B/4
64°05'N, 107°40'W

REFERENCES

Wright (1957, 1967).

PROPERTY

CO 1-35, 38

LOCATION

The property lies along the north shore of Clinton-Colden Lake, 235 miles northeast of Yellowknife.

HISTORY

In May 1973 the CC claims were staked for Windflower Mining Ltd. on massive sphalerite found in frost heave. In June 1973 the CO claims were staked to the west of these claims by M. Newbury for Great Plains Development Co. of Canada Ltd.

DESCRIPTION

The area is underlain by metavolcanic and metasedimentary rocks of the Yellowknife Supergroup intruded by granitic rocks and diabase dikes. On the CO claims only sedimentary rocks, now quartz biotite schists, have been found. These contain scattered pyrite.

CURRENT WORK AND RESULTS

Prospecting and geological mapping at a scale of one inch to one half mile found only 15% of the area was bedrock. All outcrops on the CO group are quartz-biotite schists containing about 1% pyrite. Base metal mineralization was not encountered.

CC, NOR CLAIMS
Noranda Exploration Company Ltd.
P.O. Box 1619
Yellowknife, N.W.T.
XOE 1HO

Zinc
76 B/4
65°06'N, 107°40'W

REFERENCES

Wright (1957, 1967).

PROPERTY

CC 1-200; NOR 59-66, 71-80, 83-86

LOCATION

The claim blocks lie along the northwest shore of Clinton-Colden Lake, about 230 miles northeast of Yellowknife.

HISTORY

The showings were discovered in 1972, by John Larkin, and staked on behalf of a prospecting syndicate. The CC claims were recorded in 1973 and transferred to Windflower Mining Ltd. The NOR claims were recorded on April 9, 1974 and transferred to Noranda Exploration Company Ltd., which also optioned the CC claims.

DESCRIPTION

The area is underlain by mafic to felsic volcanics including pyroclastics and mafic flows and sediments. Metasediments of the Yellowknife Supergroup lie along the southwest margin of the main block of claims. A northwest striking granite contact lies one half mile northeast of the CC claims. A boulder field on the northeast side of a small southwest trending peninsula which projects into Clinton Lake, is the site of the original discovery of massive sphalerite float. In an area underlain by felsic volcanics including quartz eye rhyolite, and cherty rocks locally interstratified with intermediate volcanics. Mafic volcanics lie about one quarter mile to the west. Several gossans on the property are derived mainly from pyrite and pyrrhotite bearing tuff.

CURRENT WORK AND RESULTS

Geological mapping at one mile to the inch was followed by airborne EM and magnetic survey with ground follow-up of anomalies by EM, VLF EM, and magnetometer surveys on 4 grids, and geological mapping on 2 grids.

Three holes totaling 1017 feet were drilled.

No promising showings were discovered, and work ceased.

PER CLAIMS

Great Plains Development Company of Canada Ltd.
736 8 Avenue, S.W.
Calgary, Alberta T2P 1H4

Copper
76 C/9
64°41'N, 108°10'W

REFERENCES

Allan *et al.* (1973); Allan, Cameron *et al.* (1973); Barnes and Lord (1954).

LOCATION

The claim block lies on the Back River, 2 miles northeast of Muskox Lake and 245 miles northeast of Yellowknife.

HISTORY

The claims were staked for Great Plains Development Company of Canada Ltd. in 1974 to cover part of an extensive gossan.

DESCRIPTION

The claims are underlain by Archean mafic and intermediate volcanics, and metasediment. Gossans have formed along a northwest striking contact between mafic volcanics and metasediments. Two gossans in the northeast part of the claim group lie on intermediate volcanics; a third in the west part of the claims contains chalcopyrite and malachite.

CURRENT WORK AND RESULTS

The claims were mapped at a scale of one inch to 1000 feet.

RIV CLAIMS

Cleaver Lake Mines Ltd.
Suite 260
727 Johnson Street
Victoria, B.C. V8W 1M9

76 C/15
64°57'N, 108°32'W

REFERENCES

Allan *et al.* (1973); Allan, Cameron *et al.* (1973); Barnes and Lord (1954).

PROPERTY

RIV 1-20

LOCATION

The claims lie approximately 250 miles northeast of Yellowknife.

HISTORY

The claims were staked over a gossan for Cleaver Lake Mines Ltd. in 1974.

There are no records of previous work, and no signs of former prospecting on the claims.

DESCRIPTION

Mafic volcanics flanked by metasediments are reported to be exposed in an anticline. An extensive gossan occurs on the claims.

CURRENT WORK AND RESULTS

Ground magnetometer surveying, a geochemical survey of frostboils, and a few rock samples yielded inconclusive results. Scattered frostboil samples showed slightly anomalous copper and zinc values. Two samples were anomalous for lead and three for silver.

The magnetometer survey which covered only part of the area included in the geochemical survey, located a 900 gamma anomaly of small areal extent.

A AND B CLAIMS
Worldwide Truck and Equipment Ltd.
1676 - 128 Street
Ocean Park, B.C. B4A 3V3

Silver, Zinc, Copper,
Lead
85 I/10, 15
65°44'N, 112°40'W

REFERENCES

Baragar (1961, 1962); Davidson (1972); Henderson (1976); Henderson *et al.* (1973); Henderson and Jolliffe (1941); Lambert (1974); Lord (1951); McGlynn (1971).

PROPERTY

A 1-8	85 I/10, 15
B 1-5	85 I/10

LOCATION

The A claims are at the north end of Turnback Lake, approximately 60 miles east-northeast of Yellowknife (III Fig. 20). The Ingraham Trail, an all weather road, leads from Yellowknife to Tibbit Lake 26 miles southwest of the A claims. A right of way to extend this highway has been cleared to a point 5 miles north of the claims.

The B claims lie 7 miles southwest of the A claims on the southern extremity of the old XLX group. They are situated mainly on the east bank of the Beaulieu River 2 miles downstream of its emergence from Turnback Lake. Tumpline Lake extends nearly to the centre of the claim group.

HISTORY

The A claims cover part of the north end of an intermittently mineralized zone that extends some 8 miles southeasterly. The B group lies on the southern extremity of this zone adjoining the OK claims, which lie to the northwest of claim B 1. Mineralization was located on the OK claims in 1937.

Considerable mineral exploration, including drilling, has been done since the first staking on the zone in 1937 by the Aerial Exploration Syndicate. The property was optioned the following year to Westfield Mining Company Ltd. who completed 5 x-ray holes and 14 larger diameter diamond drill holes on claims XL 1 and 2 which adjoin claim A 9 to the southwest.

Between 1938 and 1951 no assessment work was recorded and all except 5 claims in the Turnback Lake area lapsed. In 1951 Consolidated Mining and Smelting Ltd. (Cominco Ltd.) staked over 50 claims in the area, surrounding the remaining claims and covering the lapsed ground. The area now covered by claims A 1-8 was partly included in that staking, and hence covered by the 1 inch to 400 foot scale geological mapping, magnetometer surveys and gossan prospecting done in the early 1950's. Cominco still retains an 80% interest in claims XL 1 and 2.

The ground on which the A claims are located was dropped by Cominco Ltd. and the LUK claims were staked by the Yellowknife Syndicate in 1970, but the claims also lapsed and the land was again restaked as the A claims in September 1973, and subsequently transferred to Worldwide Truck and Equipment Ltd.

Two short lenses of mineralization were defined on the OK claims. The larger body, 30 feet long by 5.3 feet wide, yielded average values of 0.01 oz./ton Au, 18.8 oz./ton Ag, trace Cu, 8.4% Pb, and 13.7% Zn. Cominco still retains an 80% interest in claims OK 2-4.

Cominco drilled one hole to test an EM conductor on what is now claim B 4. This hole intersected weakly disseminated chalcopryrite and sphalerite accompanied by pyrrhotite and pyrite from 273 to 420 feet. The better values occur in a quartz sericite schist of probable volcanic derivation. A second hole, drilled about 1200 feet to the northeast, encountered a few short intersections of weak mineralization.

The area of the B claims was covered by an airborne Dighem EM survey in 1970 by the Yellowknife Syndicate, and by a Qestor input airborne EM and magnetic survey in 1971 for Great Plains Development Company of Canada Ltd. The Dighem survey located a north striking conductor in the area drilled by Cominco Ltd., which is now covered by claim B 4.

The B group was staked by N.J. Byrne, Jr. in 1973, and transferred to Worldwide Trucking and Equipment Ltd.

DESCRIPTION

Showings at Turnback Lake are found over a distance of 8 miles in metasediments of the Yellowknife Supergroup. All showings lie within a quarter mile of a northeast striking granite contact. The granite lies to the northwest of the metasediments except in the northwest part of the A claims at the northeast end of Turnback Lake where, near Rex Lake (62°45' 30"N, 112°38'30"W), the metasediments wrap around a nose of granite. The dip changes from about 70° to the southeast, to steep northwesterly on the northwest side of the granite nose.

The A claims are underlain by granite, pegmatite, quartz-biotite gneiss, schist and hornfels, limestone and skarn, and near the granite nose hornblende gneiss. Volcanics have not been reported on the A claims, but there are felsic volcanics about 1.5 miles south of the claims on the east side of Turnback Lake.

A pyrrhotite zone on claim A 2, about 400 feet south of Rex Lake, contains sphalerite galena and chalcopryrite.

A chip sample from a 4-foot true width of this zone gave the best values: 0.010 oz./ton Au, 1.93 oz./ton Ag, 1.2% Cu, 0.5% Pb, and 4.5% Zn. The mineralization is in sericite and biotite schists, containing tremolite, and

in quartzite which also locally contains tremolite. Cominco's 1953 maps indicate garnet-bearing and amphibole-bearing granite, pegmatite and quartz biotite gneiss in the vicinity of the showing. There are numerous gossans in the area. The mineralization coincides with a magnetic low, adjoining a positive magnetic anomaly.

CURRENT WORK AND RESULTS

A VLF EM survey, consisting of approximately 1 1/2 line miles of traverse on 6 lines, traced a northeast striking conductor for about one half mile across the B claims. The conductor is thought to be correlative with on-strike mineralization north of the claim group, and with sulphide mineralization reported in a drill hole close to the most southerly of the lines surveyed by VLF EM.

Reconnaissance mapping of the B claims during 1974 resulted in a compilation at one quarter mile to the inch that differs from the earlier 1 inch to 400-foot mapping by Cominco Ltd. The reconnaissance map shows a northeast striking 1500-foot wide belt of felsic volcanics passing diagonally through the centre of the B claims. Cominco maps show most of these rocks as quartz biotite gneiss, schist and hornfels to the northwest, and mafic to intermediate volcanics to the southeast. The two main rock types are separated by a thin unit of amphibole-bearing quartz biotite gneiss. Rocks on the southeast part of the B claim group are shown on the 1974 reconnaissance map as basic to intermediate metavolcanics whereas Cominco had mapped this area previously as acid volcanics.

Lambert (1974) indicates that mafic to intermediate volcanics underlie the B claims except for the northwest and southeast parts, which are shown as underlain by metasediments and felsic to intermediate volcanics, respectively.

A geological compilation was prepared from the assessment work submitted by Cominco for the ground now covered by the A claims. Local checks were made on the ground. Three new trenches on the XLX North Zone, 400 feet south of Rex Lake, gave silver values that were disappointing compared with those obtained by Cominco a short distance to the southwest. Two VLF EM conductors were located on the XLX North Zone. On claim A 8, north of claim XL 1 reconnaissance VLF surveying located a conductor, reported to be coincident with chalcopyrite and sphalerite in tremolite-bearing schist and micaceous quartzite.

The association of mineralization with amphibole gneiss, calc-silicate rocks and limestone is general throughout the Turnback Lake area. Although the showings are in metasediments, the proximity of felsic and intermediate volcanics, the association of mineralization with carbonate and calc-silicate units of great lateral continuity, and the great if discontinuous extent of mineralization along strike, suggest the mineralization is exhalative and distal to a centre of intermediate to felsic vulcanism.

ZAMBESI CLAIM
D. Nickerson
Yellowknife, N.W.T.

Zinc
85 I/15
62°52'N, 112°35'W

REFERENCES

Henderson (1976).

PROPERTY

ZAMBESI 1

LOCATION

The property lies about a quarter mile northeast of Granite Lake, 62 miles east-northeast of Yellowknife (IV Fig. 20).

HISTORY

ZAMBESI 1 was staked in August 1974 by D. Nickerson.

DESCRIPTION

The area is underlain by metavolcanic rocks of the Yellowknife Supergroup, intruded by granitic rocks.

A gossan within mafic volcanics on the property measures 200 feet in length and 25 feet in width.

CURRENT WORK AND RESULTS

Two trenches and two pits were excavated across the gossan. One sample assayed 0.03% Cu and 0.154% Zn. Other samples had trace amounts of gold and silver.

SAM CLAIMS

Great Plain Development Co. of Canada Ltd.
736 - 8 Avenue, S.W.
Calgary, Alberta

Copper

85 P/7
63°20'N, 112°50'W

Noranda Exploration Co. Ltd.
P.O. Box 1619
Yellowknife, N.W.T.

REFERENCES

Moore *et al.* (1951).

PROPERTY

SAM 1-17

LOCATION

The SAM claims are located approximately 75 miles northeast of Yellowknife (V Fig. 20).

HISTORY

W. Rossing located the SAM claims in 1970 and excavated 5 trenches on them in 1970 and 1971. The claims were transferred to Great Plains Development Co. of Canada Ltd. in 1973.

The SAM claims lie in an area covered by a combined EM and magnetometer survey of the Cameron River and Beaulieu River volcanic belts flown for Great Plains in 1971.

Geological mapping and 3 EXT size drill holes explored the main trenched area during 1973.

DESCRIPTION

Mafic to felsic volcanic rocks of the Cameron River belt, Yellowknife Supergroup, underlie about 3/4 of the claim group. Nodular mica schists lie west of a northerly trending chain of small lakes, extending across the property. Massive pyrite and pyrrhotite with minor chalcopyrite and sphalerite were intersected by the 1973 drilling on SAM 1, just east of the lake chain.

CURRENT WORK AND RESULTS

Ground magnetometer and horizontal loop EM surveys by Great Plains outlined a northerly trending anomaly for more than 1000 feet along the east shore of Sam Lake, on SAM 1, where massive sulphides had been intersected during the 1973 drilling.

Great Plains relinquished the SAM claims in 1974 and Noranda Exploration began work on them in November. Geological mapping at one inch to 200 feet, and ground EM and magnetometer surveys extended the surveys done for Great Plains earlier in the year.

Two north striking conductors, 800 feet apart, coincide with gossans. The western conductor appears to be the northward continuation of one located by Great Plains Development Co. of Canada Ltd.

Samples taken from old trenches gave a maximum value of 0.15% Cu and a sample from a breccia containing pyrrhotite and graphite yielded a value of 1.3% Zn.

NN CLAIM
J. Doucette
Yellowknife, N.W.T.
XOE 1HO

Uranium
85 0/3
63°06'N, 115°10'W

REFERENCES

Lord (1942).

PROPERTY

NN 1

LOCATION

The NN claim is 52 miles northwest of Yellowknife and 9 miles east of Mosher Lake (VI Fig. 20).

HISTORY

The claim was staked by J. Doucette in 1973.

DESCRIPTION

Patches of uranium mineralization are found over a 200-foot length of

an irregular pegmatite dike cutting Yellowknife Supergroup sediments near a granite contact. Mineralized parts of a pegmatite that attains a width of 4 feet gave counts 6 times background.

CURRENT WORK AND RESULTS

During 1974 Mr. Doucette prospected the granite-sediment contacts in 85 0/3.

MA AND TA CLAIMS

Texasgulf Inc.

Box 175

5000 Commerce Street, W.

Toronto, Ontario M5L 1E7

86 H/15

65°58'N, 112°57'W

REFERENCES

Allan *et al.* (1973); Bostock (1976); Craig (1960); Craig *et al.* (1960).

PROPERTY

MA 1-9; TA 1-4

LOCATION

The claims are just west of Rockinghorse Lake, 245 miles northerly of Yellowknife. The MA claims were 5 miles west and a mile north of the TA claims.

HISTORY

The claims were staked in 1973 for Ecstall Mining Ltd., a wholly owned subsidiary of Texasgulf Inc.

In 1973 horizontal loop EM and magnetometer surveys on the MA group located 2 conductors with coincident magnetic anomalies.

DESCRIPTION

Bostock (1976) shows the area of the claims underlain by diorite, granodiorite and medium grained amphibolite. There are minor amounts of banded amphibolite on the MA claims and small amounts of pyroxenite in the area of the TA claims. A unit of predominantly mafic volcanics is shown immediately east of the TA group.

Geophysical anomalies found on the MA claims in 1973 are associated with shallow westerly dipping magnetite or pyrrhotite-bearing metasediments.

CURRENT WORK AND RESULTS

Soil samples collected on the MA claims and analyzed for Cu, Pb, Zn and Ag, delineated a narrow copper-silver anomaly. Several one-sample anomalies were recorded.

EM and magnetometer surveys located two weak to moderate conductors on the TA claims.

The MA claims lapsed by 1976.

PROSPECTING PERMIT 296
Texasgulf Inc.
Box 175
5000 Commerce Street, W.
Toronto, Ontario M5L 1E7

Silver, Zinc, Copper
86 I/2
66°07'N, 112°45'W

REFERENCES

Bostock (1967, 1976); Craig *et al.* (1960); Fraser (1974); Hyde *et al.* (1976); Padgham *et al.* (1976).

PROPERTY

Prospecting Permit 296

LOCATION

The permit lies immediately west of Takijuq Lake, 255 miles northerly from Yellowknife.

HISTORY

Prospecting Permit 296 was granted in 1973 to Ecstall Mining Ltd., a wholly owned subsidiary of Texasgulf Inc.

Reconnaissance ground surveys in 1972 and an airborne combined EM and magnetometer survey by Kenting Earth Sciences Ltd. in 1973 were followed by ground investigation of 12 anomalies and on an area of favourable geology.

Ground surveys included VLF EM, horizontal loop EM, magnetometer, soil geochemical and one inch to one mile geological mapping of the Archean terrain, on 86 I/2. Nine anomalies were mapped in more detail and three were explored by soil geochemical survey.

A geological map of the 86 I/2 east of Takijuq Lake was completed.

DESCRIPTION

The permit area is underlain by Archean and mainly Aphebian, Proterozoic rocks, but mapping was confined to the Archean formations, which all lie east of Takijuq Lake. A thick and extensive sill, or group of sills of presumed Helikian age intrude the Aphebian Rocknest, Recluse and Takiyuak Formations on the west side of the area and appears locally in the Archean terrain along the east shore of the lake.

Texasgulf has mapped a wide expanse of mafic to felsic volcanic rocks concentrated in the southern part of 86 I/2. It's surrounded by a varied assortment of granitoid rocks except at the southwest, where the volcanic belt extends southward, and to the north and northeast where narrow arms of volcanics extend for a considerable distance (Hyde *et al.* 1976). Within the thickest portion of the volcanic belt at Amoogabooga Lake there is a 5-mile by 1-mile lens of felsic volcanics, considered to be part of a felsic dome by Texasgulf workers. It is surrounded by mafic and intermediate volcanics and locally by granitic rocks. As many as three periods of folding are reported. The volcanics were metamorphosed, and the granitic rocks emplaced during the Kenoran orogeny.

Base metal sulphides were first discovered in the centre of the felsic volcanics at 66°03'30"N, 112°24'15"W in the No. 10 zone now estimated to

contain 500,000 tons of 5% Cu, 3.5% Zn and 1 oz./ton Ag. The deposit has a close spatial relationship to an amygdaloidal basalt. There are several other sulphide occurrences in the felsic volcanics.

CURRENT WORK AND RESULTS

Work was done on 10 grids in 1974, as listed in Table VIII. Geochemical surveys used soil materials, wherever possible from frostboils, to test for anomalous concentrations of Pb, Zn, Cu and Ag, as determined by hot HNO₃-HCl extraction and atomic absorption.

TABLE VIII

Grid Numbers and Locations, Texasgulf Prospecting Permit 296

Grid	Area/Anomaly Nos.	Latitude	Longitude
G	9	66°06'30"	112°33'50"
P	33	66°05'25"	112°34'45"
	42	66°02'15"	112°38'55"
E	29	66°05'25"	112°42'30"
R	41	66°02'05"	112°42'30"
F	4	66°06'00"	112°45'10"
A	10	66°06'35"	112°45'15"
C (W Extension)	461 showing	66°04'10"	112°46'50"
I	3	66°04'50"	112°49'30"
N	38	66°03'30"	112°50'30"

Grid G; Area 9

Soil geochemical sampling, horizontal loop VLF EM, and magnetometer surveys located short conductors with coincident geochemical anomalies.

Grid P; Area 33

Soil geochemical, horizontal loop EM, and VLF EM surveys did not give encouraging results.

Grid E; Area 29

Geochemical soil sampling, horizontal loop EM, and VLF EM surveys identified a long conductor that is related to an oxide and carbonate iron formation.

Area 42

A small pocket of felsic tuff and andesite or basalt surrounded on three sides by granitic rocks, and bounded to the east by amphibolite was tested with horizontal loop EM and VLF EM surveys. The AEM conductor was not located.

Grid R; Area 41

Geological and geochemical soil sampling extended southward from the area covered in 1973. Magnetometer, horizontal loop and VLF EM surveys covered the grid. Gossans give impressive copper, zinc and silver values. Chalcopyrite, pyrite and sphalerite were observed.

Grid F; Area 4

A geochemical soil sampling survey and detailed magnetometer, and gravity surveys found a gravity high of 0.15-0.2 milligals that is locally coincident with a conductor. Geochemical results were encouraging.

Grid A; Area 10

The ground was tested by a gravity survey and 5 diamond drill holes totaling 1824 feet. An additional hole 228 feet in length was drilled on the outlying 10b zone, to the northeast on the number 10 grid.

Impressive copper-zinc intersections with minor silver and lead values were encountered in this drilling; some of the better intersections follow:

Hole No.	Width of Intersection	Cu%	Zn%	Pb%	Ag oz./ton	Au oz/ton
10-1	26.5 feet	4.39	1.56	0.14	0.71	0.027
10-2	52.3 feet	8.63	0.41	0.07	0.79	0.118
10-4	18.3 feet	0.30	18.64	2.75	1.90	trace
	23.0 feet	3.13	1.29	0.03	1.82	trace
10-5	25.5 feet	1.20	8.50	1.16	1.57	trace
	25.0 feet	3.51	6.95	0.60	1.81	trace

The deposit is structurally complex as it extends along both limbs of a northeast plunging fold. Values have been encountered in volcanics ranging in composition from mafic to felsic, but are particularly widespread in an amgdaloidal unit, originally described as dacite, but which chemical work indicates is an amygdaloidal basalt.

Grid C; West Extension; Area 46 and 461 showing

VLF EM, IP, telluric, magnetometer and horizontal loop EM surveys were performed.

The best intersections in the two diamond drill holes on the showing were 34.1 feet of 0.91% Cu, 0.18 oz./ton Ag, in porphyritic rhyolite, in one hole and 19.2 feet of 0.60% Cu, 5.30% Zn, 0.82% Pb, and 0.81 oz./ton Ag in the other.

Grid I; Area 3

Gravity surveying and geochemical soil sampling explored an area where the 1973 geological survey had located pyrrhotite, pyrite and graphite. The gravity survey which was done to check a conductor coincident with anomalous geochemical values in soils, did not suggest the presence of massive sulphides.

Grid N; Area 38

Geophysical and geochemical soil surveys to explore an airborne EM conductor found nearly coincident geochemically, horizontal loop EM and gravity anomalies in felsic tuffs. Carbonate veins in these tuffs contain sphalerite and galena.

HACKETT - BACK RIVER VOLCANIC BELT

Discovery of extensive massive sulphide deposits containing silver, copper, zinc and lead, on the Bathurst Norsemynes property in the Hackett River area between 1969 and 1973 caused renewed interest in volcanic belts in the northeastern part of the Slave Province where a one half to five mile wide volcanic belt has now (Frith and Hill 1975; Frith *et al.* 1977) been traced for 80 miles. The belt contains a high proportion of felsic rocks, and a relatively small amount of mafic material. Silicified and rusty weathering zones are abundant and widespread. Following release of the geochemical results of the Bear-Slave Operation (Allan *et al.* 1973) and

follow-up surveys (Cameron and Durham 1974) extensive staking covered much of the volcanic belt and some of the sediments in the greywacke basin to the east.

Until 1974 the only published geological maps for this area were either the product of reconnaissance helicopter operations (Fraser 1964; Wright 1967) or were confined mainly to the Goulburn cover rocks (Tremblay 1971). DIAND and Geological Survey of Canada crews have mapped the volcanic belt and much of the surrounding granitic and greywacke terrain. This work has been summarized by Frith and Hill (1975), and is shown in Figure 22.

Extensive granitic intrusions lie to the west of the volcanic belt and locally, particularly in the southern part of the area, have invaded the volcanic belt as well. The volcanic-sediment interface is marked by extensive, locally pillowed basaltic andesite flows, more rarely by felsic piles, and is a locus of carbonate precipitation as cement in tuffs, agglomerates, breccias or flows, and locally as well-bedded carbonates. A recessive unit of thin bedded slaty shale underlies a distinctive valley along portions of the volcanic contact, and a few hundred feet into the sediments a thin bed of magnetite iron formation forms a distinctive magnetic marker that can be traced for about 25 miles.

The belt is remote and access is essentially by air. Few portions of the belt are more than 5 miles from a lake suitable for use by fixed wing aircraft, but the larger exploration programs have used helicopters extensively. In places, as in the northwest corner of 76 G/5, eskers have been used by wheel equipped Twin-Otters. Surface transportation systems are non-existent, but the area is less than 400 miles (600 km.) from Baker Lake which provides access for ocean transport into Hudson Bay.














Six large companies were active in the region in 1974. Some thousands of claims are held and more than 30 claim groups were explored in more or less detail. Extensive staking in 1974 followed geophysical surveys flown over portions of the supracrustal belt for some of the companies active in the district.

Colour air photographs of most of the volcanic belt (Fig. 22) taken in 1974 at a scale of approximately one quarter mile to the inch (Slaney 1975) were used by DIAND geologists in 1975, and by some company personnel. They were found to be extremely useful, permitting close control of location on the ground and accurate extrapolation of rock types and contacts which commonly appear as distinctive colour or tonal variations on the photographs. Enlargements from colour transparencies printed on ozalid paper at scales as large as 250 feet to the inch were used in mapping parts of the Yava Prospect. In spite of the approximately 6 times enlargement, the clarity and quality of the resulting blue-prints were sufficient to permit recognition of individual large boulders on the photo blue-prints and correlation of these with the actual boulders on the ground.

REFERENCES for the district are listed below. Only those specific to each property are given with the property.

Allan *et al.* (1973); Allan and Cameron (1973); Bryan, Padgham *et al.* (1976); Boyd *et al.* (1975); Cambell, Cecile (1976); Cameron (1975); Cameron and Durham (1974a, 1974b, 1975); Cameron and Lynch (1975); Fraser (1964); Frith and Hill (1975); Frith *et al.* (1977); Henderson (1975); Horton and Lynch (1975); Jefferson, Bryan *et al.* (1976); Kornik (1975); Padgham, Bryan *et al.* (1975); Padgham, Sterenberg *et al.* (1975); Pearce and Lefebvre (1975); Scott (1975); Slaney (1975); Tremblay (1971); Williams (1975); Wright (1957, 1967).

LEGEND

- | | | | | |
|--|--|---|----------------------------------|-------------------------|
|  | Goulburn Group |  | geological contacts | 9. CER |
|  | Granitic rocks mainly intrusive into metamorphic rock |  | faults | 10. JK 1-268 |
|  | Metasediments, mainly greywacke |  | claim boundaries current, lapsed | 11. GO 1-164 |
|  | Mafic and intermediate volcanics includes pillowed flows at the top of the volcanic succession |  | | 12. EAST CLEAVER |
|  | Intermediate to felsic volcanics |  | Ag-Cu-Zn-Pb deposits | 13. Boot Lake |
|  | Dominantly felsic volcanics includes rhyolite domes in the south |  | 1-24 claim blocks worked in 1974 | 14. A-zone |
|  | Quartzo-feldspathic metasediments surrounding Hackett River diapiir | | | 15. OKT |
| | | | | 16. SA 1-81 |
| | | | | 17. ED 1-24 |
| | | | | 18. NEC 1-86 |
| | | | | 19. PM 1-72 |
| | | | | 20. CAL 80 claims |
| | | | | 21. SASH 1-64; BEE 1-35 |
| | | | | 22. PAT 1-13 |
| | | | | 23. BILL 1-12 |
| | | | | 24. ANIE 1-20 |

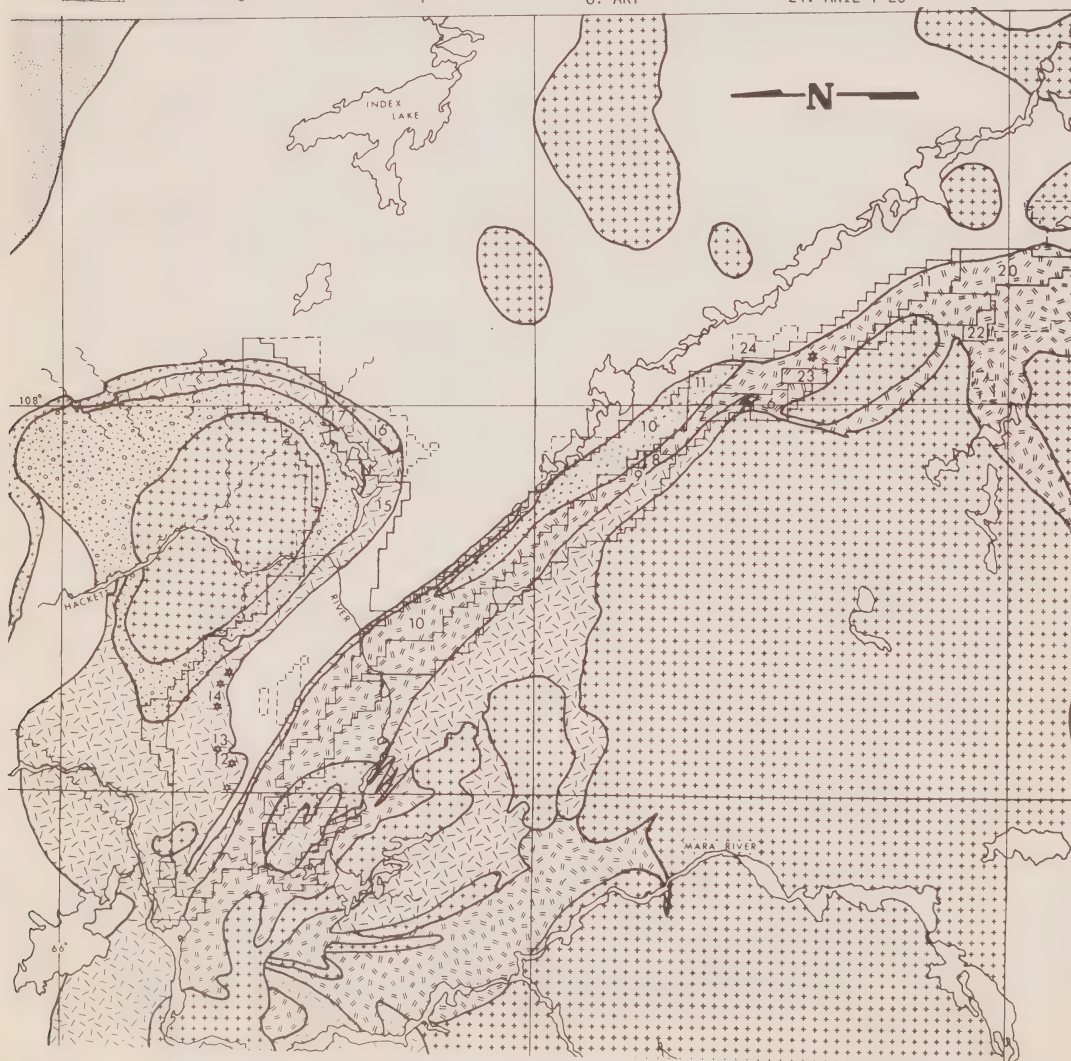




Figure 22. Geological map of Hackett-Back Rivers Volcanic Belt showing properties worked in 1974 and other claims (as of January, 1977). Geology modified from Frith and Hill (1975)

FERRIC-SANCTUARY-CONTACT LAKES PROJECT
AD, CP, DT, MB, COOKIE, FF CLAIMS
Teck Corporation Ltd.
Suite 700
1177 West Hastings Street
Vancouver, B.C. V6E 2K5

76 F/8, G/4, G/5
65°18'N, 118°08'W
65°15'N, 107°50'W

REFERENCES

Cameron and Durham (1974); Frith and Hill (1975); Frith *et al.* (1977).

PROPERTY

11 COOKIE claims; 109 FF claims	76 F/8
AD 1-36; CP 1-72; DT 1-36; MB 1-72	76 G/4, G/5

LOCATION

The claims lie 270 miles northeasterly of Yellowknife in the southern part of the Hackett-Back River District. The COOKIE-FF block lies 5 miles westerly from the AD-CP-DT-MB block (Nos. 2 and 1 respectively, Fig. 22).

HISTORY

The COOKIE and FF claims were staked in 1974 for Teck Corporation Ltd. The rest of the claims were staked in 1971 and were held by Mrs. Hazel Midgeley in 1974. Gossans in the area reportedly were prospected for gold during the mid-forties. Since then little had been done in the area until the recent silver-base metal discovery at Bathurst Norsemine 36 miles to the northwest.

DESCRIPTION

The two claim blocks lie along the same southeasterly trending section of the southernmost part of the Hackett River Volcanic Belt and the rock types of interest on each block are similar (Fig. 20) (Frith and Hill (1975).

The COOKIE-FF block is underlain by mafic to felsic pyroclastics and flows that dip about 60° south. A lower unit of rhyolite flows and dacitic tuff which is penetrated by a vent containing rhyolitic breccia, is overlain by an intervalvolcanic unit of graphitic slates, quartzite, and iron formation that includes ferruginous slate and quartzite, and quartzite with abundant magnetite. These topographically recessive sediments are overlain mainly by mafic volcanics, which along the southern margin of the claim block, are overlain by greywacke. On parts of the property the lower volcanic unit is partly re-crystallized to a gneiss.

Amphibolite, a minor constituent of the lower volcanic unit, may have formed by metamorphism of calcareous portions of that unit, as in places the mafic and intermediate tuffs are rich in carbonate. A conspicuous gossan has formed on the intervalvolcanic unit.

Favourable rocks underlying the central part of the AD-CP-DT-MB claim block comprise a northwesterly striking sequence of supracrustal rocks. Gneiss derived from dacitic tuffs is intruded by granites and overlain by a tripartate sequence of volcanogenic rocks including a lower intermediate to felsic sequence, an intervalvolcanic sequence of graphitic slate, quartzite, iron formation, phyllite and greywacke, and an upper sequence of mafic lava and tuff. Greywacke, overlying the volcanic rocks, is exposed mainly south of the claims.

CURRENT WORK AND RESULTS

One inch to 1000 foot geological mapping outlined a rhyolite breccia pipe in the northwest part of the COOKIE-FF claim block. This pipe may be the vent from which the locally increased thickness of felsic volcanics is derived. Soil and gossan samples collected on the claims were analyzed for Cu, Zn, Pb and Ag. The AD-CP-DT-MB block was mapped at one inch to 1000 feet and geophysical and geochemical surveys tested a gossan near the base of the intervalcanic sequence. Magnetometer and EM surveys identified conductors north of Contact Lake and a zone of ferruginous quartzite gave a strong magnetic signature.

In contrast to previous results (Cameron and Durham 1974, p. 20), high background values for silver were obtained. The same disparity of geochemical results is reported for lead values from the gossan. The presence in the gossan of unoxidized pyrite and pyrrhotite suggests leaching is not an important factor in the interpretation of the geochemistry.

WES CLAIMS
Noranda Exploration Company Ltd.
P.O. Box 1619
Yellowknife, N.W.T.

76 F/8
65°19'N, 108°12'W

REFERENCES

Frith and Hill (1975).

PROPERTY

WES 1-6

LOCATION

The claims lie approximately 260 miles northeast of Yellowknife (3 Fig. 22).

HISTORY

The WES claims were staked for Noranda Exploration Company Ltd. in 1974 after ground and airborne surveys.

DESCRIPTION

Outcrop is scarce on the claims, and non-existent on the 1500-foot square grid located on an EM anomaly in the south central part of the claim block.

CURRENT WORK AND RESULTS

Magnetometer and various EM surveys defined a conductor with weak magnetic correlation on the 1500-foot square grid.

DUCH CLAIMS
Noranda Explorations Company Ltd.
P.O. Box 1619
Yellowknife, N.W.T.

76 F/8
65°21'N, 108°04'W

REFERENCES

Frith and Hill (1975).

PROPERTY

DUCH 1-4

LOCATION

The claims lie approximately 270 miles northeast of Yellowknife and about 25 miles east of Nose Lake (4 Fig. 22).

HISTORY

The DUCH claims were staked in 1974 following airborne EM and magnetic survey and ground follow-up.

DESCRIPTION

The area is underlain by granite, felsic agglomerate and tuffaceous sediments. A gossan, containing pyrite and pyrrhotite, strikes northwest through the centre of the area and caps part of the agglomerate unit.

CURRENT WORK AND RESULTS

Prior to staking, the area was mapped at one inch to 200 feet, and explored with VLF EM and magnetic surveys which showed a 1200-foot long conductor coincident with the sulphide-bearing gossan.

KIM CLAIMS
Noranda Exploration Company Ltd.
P.O. Box 1619
Yellowknife, N.W.T.

76 F/8
65°21'N, 108°10'W

REFERENCES

Frith and Hill (1975).

PROPERTY

KIM 1-35

LOCATION

The claims lie approximately 270 miles northeast of Yellowknife (5 Fig. 22).

HISTORY

Airborne EM and magnetic surveys located anomalies that were staked as the KIM group in 1974.

DESCRIPTION

The claims are underlain by volcanic rocks (Fig. 22) of the Hackett River-Back River volcanic belt (Frith and Hill 1975).

CURRENT WORK AND RESULTS

In 1974 ground magnetometer and various types of EM survey of four grids on the KIM group located conductors in felsic volcanics and along thin units of graphitic sediments. Geological mapping of the same grids at a scale of one inch to 200 feet showed they are underlain by massive and pillowed mafic volcanics, felsic flows and pyroclastics, graphitic sediments, black shales, and feldspar porphyry which may be intrusive. Gossans are locally developed over black shales, graphitic sediments and felsic tuffs.

MEL CLAIMS
Noranda Exploration Company Ltd.
P.O. Box 1619
Yellowknife, N.W.T.

76 F/9, G/12
65°37'N, 108°00'W

REFERENCES

Bryan, Padgham *et al.* (1975); Padgham, Bryan *et al.* (1975).

PROPERTY

MEL 1-18

LOCATION

The claims lie about 280 miles northeast of Yellowknife and 30 miles northeast of Nose Lake (6 Fig. 22).

HISTORY

The claims were staked in 1974 following regional airborne geophysical surveys.

DESCRIPTION

The MEL claims lie along the west edge of the Hackett River volcanic belt. They are underlain mainly by intermediate and felsic pyroclastics which have been metamorphosed by the granodiorite-quartz monzonite plutons which intrude the volcanic belt and underlie the western edge of the claims (Fig. 22) (Bryan, Padgham *et al.* 1976).

CURRENT WORK AND RESULTS

Airborne EM anomalies detected in the south central part of the claim block were investigated by vertical loop EM, EM shootback and magnetometer surveys of a 2500 by 2000 foot grid. A geological map prepared at 1 inch to 200 feet shows the south central part of the claim block underlain by felsic to intermediate volcanics and gabbro.

An EM conductor with coincident magnetic expression is associated, in part, with a gossan developed on felsic fragmental volcanics in the centre of the grid area.

ELF CLAIMS
Cominco Ltd.
200 Granville Square
Vancouver 2, B.C. V6R 2R2

Copper, Lead, Zinc
76 F/9, G/12
65°40'N, 108°03'W

REFERENCES

Bryan, Padgham *et al.* (1975); Padgham, Bryan *et al.* (1975).

PROPERTY

ELF 1-43

LOCATION

The ELF group lies about 295 miles northeast of Yellowknife and 20 miles southeast of the Bathurst Norsemines Property (7 Fig. 22).

HISTORY

The ELF claims were recorded in 1974, a time of high staking activity in this area.

DESCRIPTION

The claims are mainly underlain by northwest striking andesite containing numerous lenses of felsic pyroclastics. The claims are bounded to the southwest by granite. A geological contact between calcareous andesite and overlying greywacke and schist lies some 3500 feet northeast of claim ELF 14.

CURRENT WORK AND RESULTS

The claim group and a smaller area adjoining to the northeast was geologically mapped at a scale of 1 inch to 1000 feet.

Four rock samples were examined petrographically and five rock samples were analyzed for Cu, Pb and Zn. Disseminated and massive pyrite was found in felsic volcanics.

ART AND CER CLAIMS
Noranda Exploration Company Ltd.
P.O. Box 1619
Yellowknife, N.W.T.

76 F/9
65°41'N, 108°04'W

REFERENCES

Padgham *et al.* (1976).

PROPERTY

ART 1-2; CER 1-3

LOCATION

The claim groups are about 280 miles northeast of Yellowknife, approximately a mile apart (8, 9 Fig. 22).

HISTORY

The claims were staked in 1974 after airborne and ground geophysical surveys.

DESCRIPTION

The ART and CER groups cover parts of the contact of a thick sequence of intermediate to felsic, dominantly pyroclastic, volcanics with overlying pillowed andesitic basalts (Fig. 22) (Bryan, Padgham *et al.* 1976).

CURRENT WORK AND RESULTS

EM surveys and one inch to 2000 foot scale geological mapping of a 600 by 1200 foot area on ART 2 claim in an attempt to explain AEM results, failed to detect conductors.

The mapping on ART 2 found vertically dipping volcanics of mafic to felsic composition. The felsic volcanics are agglomerates containing barren pyrite on which a gossan has developed. The mafic volcanics include massive and pillowed flows.

Horizontal shootback and vertical loop EM surveys on the CER group outlined a north striking conductor coinciding with the gossan. Geological mapping, at 200 feet to the inch of a grid, located to cover anomalies detected by the airborne geophysical surveys, showed most of the CER claims are underlain by mafic and felsic flows and pyroclastics. A narrow, pyrite bearing, graphitic gossan strikes north within the felsic pyroclastics. Outcrop is scarce.

GO-JK CLAIMS: YAVA PROSPECT
Brascan Resources Ltd.
Suite 1200
Bow Valley Square
202 - 2 Avenue, S.W.
Calgary, Alberta T2P 2R9

Silver, Copper, Zinc,
Lead
76 F/9, F/16, G/12
65°41'N, 108°00'W

REFERENCES

Allan *et al.* (1973); Allan and Cameron (1973); Boyd *et al.* (1975); Bryan, Padgham *et al.* (1976); Cameron (1975); Cameron and Durham (1974a, 1974b, 1975); Cameron and Lynch (1975); Henderson (1975); Horton and Lynch (1975); Jefferson, Bryan *et al.* (1976); Kornik (1975); Padgham, Bryan *et al.* (1975); Pearce and Lefebvre (1975); Scott (1975); Williams (1975).

PROPERTY

JK 1-268
GO 1-164

76 F/9, F/16, G/12
76 G/12

LOCATION

The GO and JK groups, 290 miles northeast of Yellowknife, are shown on Figure 22 as properties 10 and 11 respectively.

HISTORY

The G0 claims, on which the Yava deposit lies, were recorded and transferred to Brascan Resources in 1974. The JK claims were recorded and transferred to Conwest Exploration Company Ltd. in 1974 and transferred to Brascan Resources Ltd. in 1975.

Concurrently with the Brascan Resources Ltd. program in 1974, a large Geological Survey of Canada party under E.M. Cameron was engaged in detailed geological, geophysical and geochemical surveys over the Yava Prospect area, as well as in regional geochemical surveys. The same year a field party from the Department of Indian Affairs and Northern Development mapped parts of 76 F/9, 76 F/16 and 76 G/12, including much of the G0-JK claims area.

DESCRIPTION

The G0-JK block extends for about 27 miles in a northwesterly direction and is, for most of its length, about 1 1/2 miles wide. It is underlain by a belt of intermediate to felsic volcanics bordered on the west by intrusive granitic rocks and on the east by greywackes.

The predominant volcanic rocks include pillowed andesite, andesitic and dacitic pyroclastics, quartz latite and quartz-eye rhyolite. Observations on pillows in the lavas indicate tops are to northeast. Calcareous pillow lavas, agglomerates, tuffites, calcareous sediment and chert appear towards the top of this volcanic sequence. The overlying Yellowknife Supergroup greywackes are separated from the volcanics near Aitch Lake by a small valley eroded in a thin unit of graphitic slate. A thin bed of magnetic iron formation 1/2 mile east of and parallel to the volcanic contact is poorly exposed, but forms a good marker horizon due to its magnetic expression.

CURRENT WORK AND RESULTS

The geology of the G0-JK block was mapped at one inch to a half mile, with more detailed work in areas of favourable geology.

Magnetometer and EM surveys over the gossan zones located a number of conductors.

Four hundred and fifty-four samples, taken mostly from frostboils, analyzed for Cu, Pb, Zn, Ag and Au. Gossans were found mainly over sulphide bearing pyroclastic rocks, including tuffites and agglomerates, many of which contain cherty, limey or graphitic beds.

Five diamond drill holes totaling 1243 feet tested the Yava main zone on G0 11. Zinc, copper and lead mineralization with silver and gold values was encountered in all holes. Brascan considers that the mineralization is "similar to other Archean greenstone-type massive sulphides".

BATHURST NORSEMINES LTD. OPTION
Cominco Ltd.
200 Granville Square
Vancouver, B.C. V6C 2R2

Silver, Zinc, Copper, Lead
76 F/15, F/16, G/13
65°50'N, 108°27'W

REFERENCES

Jefferson, Bryan *et al.* (1976); Jefferson, Shegelski *et al.* (1976); MacNeill (1973); Padgham, Jefferson *et al.* (1975).

PROPERTY

Over 1000 claims in 21 groups make up the Bathurst Norsemimes Option (Fig. 22).

LOCATION

The claims lie 325 miles northeast of Yellowknife (12-15 Fig. 22).

HISTORY

Rio Tinto Canadian Exploration Ltd. prospected the area in 1956 and reported copper mineralization, including that on what is now called the A-zone.

In 1966 L. Ostensoe and associates staked the A-zone at Camp Lake, and formed Bathurst Inlet Mining Corporation Ltd. Further staking and prospecting in 1967 followed by geophysical surveys in 1968 outlined a conductor. At this stage three companies, Norsemimes Explorations Ltd., Atlin-Yukon Mines Ltd. and Bathurst Inlet Mining Corporation Ltd. held 940 claims in the area. Bathurst Inlet Mining Corporation intersected good silver values with its 1969 drilling program, and that year the three companies combined to form Bathurst Norsemimes Ltd. Under an agreement with Cominco Ltd., made in 1970, Cominco was to spend \$2,000,000 by December 31, 1975 and \$200,000 a year thereafter, until it earns a 60% interest in Bathurst Norsemimes Ltd. Since 1970 Cominco has extensively explored the property with geological, airborne and ground geophysical and geochemical surveys and several thousand feet of diamond drilling, and by December 1974 had established 20 million tons of potential ore in East Cleaver Lake, Boot Lake and A Zones (Nos. 11, 12, 13 Fig. 22), according to Bathurst Norsemimes Ltd. annual reports. This includes some 4,000,000 tons grading 5.34 oz./ton Ag and 8.11% Zn, with minor Cu, Pb and Au values in the East Cleaver Lake Zone, and 5,000,000 tons grading 5.86 oz./ton Ag and 5.96% Zn, together with minor copper and lead values in the Boot Lake Zone. The Jo, Finger Lake and Anchor Lake Zones have also been drilled.

DESCRIPTION

The southwest plunging, overturned Hackett Syncline, partly lying within the claim area, is bounded to the north, west and south by granitic rocks. Intermediate to felsic volcanics with abundant pyroclastics are exposed on the northeast limb of the syncline, and mafic to intermediate volcanics, including pillow flows, are exposed on the southwest limb. Abundant felsic tuffs, breccias and agglomerates north of Anne, Boot, Finger and Camp Lakes suggest a volcanic centre in that area.

The mineral belt, which extends along the northwest limb of the Hackett Syncline, has been defined by Cominco geologists as a "thin bedded assemblage of rhyolite tuff, cherty or calcareous tuffite, chert and

limestone". In the Camp Lake-Finger Lake area, it lies within 1000 feet of the volcanic sediment contact.

Cherty beds, argillaceous tuffites, calcareous argillites, impure limestones or derived calc-silicate rocks within a mainly volcanic sequence, and footwall alteration zones in this area suggest a volcanogenic exhalative genesis for the mineralization. During a period of volcanic quiescence, volcanogenic sediments and sulphides were deposited over a wide area. Metamorphism has converted the more argillaceous beds to sillimanite and locally kyanite or staurolite bearing gneisses. The mafic volcanics have become amphibolites and the carbonate units calc-silicates with abundant diopside and tremolite. Garnets are particularly abundant in the footwall alteration zone north of Camp Lake.

CURRENT WORK AND RESULTS

A 595-foot long hole was drilled into the East Cleaver Lake Zone on claim BB 61 (11 Fig. 22) to provide a sample of the massive sulphides for metallurgical testing. NQ size equipment was used to obtain large diameter cores for this sample.

Nine holes totaling 5506 feet drilled to investigate locally coincident EM and gravity anomalies on claim BB 59 (12 Fig. 22) defined additional tonnages of silver-zinc mineralization with minor copper and lead values.

The Anchor Lake hole (14 Fig. 22) tested strong coincident EM and gravity anomalies on OKT 28, but encountered only minor to trace level mineralization.

A detailed geochemical study on the East Cleaver Lake and A Zones (11 and 13 Fig. 22) was initiated and additional geophysical surveys, including gravity, covered several parts of the property. A detailed geological survey was made in an area north of Camp Lake.

SA AND ED CLAIMS
Mid North Explorations
1601 1277 Robson Street
Vancouver, B.C.

Silver, Copper, Zinc,
Lead
76 F/16
65°51'N, 108°02'W

Cominco Limited
200 Granville Square
Vancouver 2, B.C.

REFERENCES

Jefferson, Bryan *et al.* (1976).

PROPERTY

SA 1-81; ED 1-24

LOCATION

The SA and ED groups are east of Cominco's Bathurst Norsemes Option in the Hackett River area, 300 miles north of Yellowknife (16 and 17 respectively Fig. 22).

HISTORY

The 81 SA claims were staked in 1969 by E. Sonneberg and D. Mercredi, and the ED group by D.E. Arden in 1970. Limited trenching on the SA claims in 1970, and on the ED claims in 1971 exposed small amounts of sulphides.

In 1972 Cominco optioned the claims which lie at the east end of the Bathurst Norsemes property.

DESCRIPTION

The ED and SA groups are in a rugged portion of the barren lands of the central Arctic. D'Arcy Lake provides a route from the northeast to southwest sides of the property.

A sequence of upper amphibolite facies rocks trends northeasterly across the property. Traces of lead-zinc-silver mineralization in conformable lenses associated with felsic tuff and white hyalite crystal tuff, are present in at least three parts of the property.

CURRENT WORK AND RESULTS

This report of work done in 1971 and 1972 was omitted from the 1971-72 MIR.

In 1971, 29 cubic yards of trenching was done on the ED claims. The following year, nine trenches were excavated on the SA claims gossan. Minor values of copper and low values of lead-zinc and silver were found in a white, sericitic quartzose host rock. Assays from two grab samples were: 0.2% Pb, 0.11% Zn, 0.005% Cu, 0.60 oz./ton Ag, trace of gold; 0.99% Pb, 0.41% Zn, 0.02% Cu, 1.46 oz./ton Ag and trace of gold.

In 1972 detailed geological mapping showed the property is underlain by a series of mainly northeasterly trending upper amphibolite grade metamorphosed volcanic and sedimentary rocks. Primary structures indicative of tops were not found and bedding is probably transposed in these strongly foliated rocks. Felsic and lapilli tuff with minor quartz feldspar porphyry, agglomerate, and white rhyolite crystal tuff in the lower part of the section are overlain by metasediment, amphibolite, intermediate tuffs and mixed felsic and intermediate tuffs. Argillite, greywacke and siltstones with a carbonaceous argillite-chert horizon and carbonate rich beds appear at the top of the volcanic units at their contact with graded turbidites. Near the northeast end of D'Arcy Lake the metavolcanics have been converted to sericitic phyllites and quartz muscovite schists.

Mineralization is reported from three areas on the claims. Thin layers of black sphalerite with minor chalcopryrite vein white rhyolite and crystal tuff on SA 4 at the southwest end of D'Arcy Lake, and similar veinlets are associated with biotite in felsic tuff near the north end of the lake. Layers containing pyrite disseminations are found within the felsic tuffs. Carbonaceous argillite and chert in the southeast part of the claims contain beds of pyrite-pyrrhotite with local concentrations of chalcopryrite and sphalerite. All three showings have been tested by ground EM, magnetometer and IP surveys, and by 1418 feet of drilling, with disappointing results.

Ground geophysical surveys on three grids; one on the mineral showings at the south end of D'Arcy Lake, another on the argillite-chert showings, and the third east of D'Arcy Lake, tested two showings and two one-channel

EM anomalies detected by an airborne survey. Geonics EM 17 equipment employing 200- and 300-foot coil separations were used over 10 grid miles and surveys with a Sharpe MF Fluxgate magnetometer covered 1.9 miles of survey line. Only grids west and south of D'Arcy Lake were surveyed. An IP survey of the trenched showings southwest and north of D'Arcy Lake covered 0.9 line miles.

Following the geophysical surveys, four holes were drilled to further test the trenched mineralization. Two holes totaling 519 feet were drilled on copper-zinc showings in the carbonaceous argillite bed on SA 19, in the southeast corner of the property. One hole did not intersect mineralization considered worth assaying, the other encountered sub-economic copper-zinc-lead. One of two holes drilled to test the southwest D'Arcy Lake showing, SA 4, reached a depth of 200 feet. It failed to intersect sulphides considered worthy of assaying, but the second hole encountered two narrow sections containing sub-economic silver-copper-lead-zinc values before termination at a depth of 300 feet. A fifth hole drilled to a depth of 498 feet on the northern showing encountered many narrow zones of pyrite and one 20-foot intersection carrying minor silver-copper-lead and 4.4% Zn.

NEC CLAIMS

Noranda Exploration Company Ltd.
P.O. Box 1619
Yellowknife, N.W.T.
XOE 1HO

76 G/2

65°05'N, 106°50'W

REFERENCES

Allan *et al* (1973); Allan and Cameron (1973); Frith and Hill (1975);
Frith *et al* (1977).

PROPERTY

NEC 1-86

LOCATION

Casey Lake, near the NEC claims, lies approximately 270 miles north-east of Yellowknife (18 Fig. 22).

HISTORY

The NEC claims were staked in March 1974 for Noranda Exploration Company Ltd. to cover geochemical anomalies located by the Bear Slave Operation (Allan *et al* 1973), (Allan and Cameron 1973).

DESCRIPTION

About 80% of the claim block is underlain by quartz-mica schist, grey-wacke and phyllite. Black graphitic slate and mafic volcanics, commonly pillowed, strike northwest through the claim group and may be correlated with units mapped by Frith and Hill (1975), to the northwest of Casey Lake. Granite underlies the southwest boundary of the claims. Gossans have developed on the graphitic slate, on the mafic volcanic units and near the western boundary of the claims in an area underlain by diabase. The most significant feature of the geology is the quarter mile wide unit of metavolcanics and graphitic metasediments trending across the centre of the claims.

CURRENT WORK AND RESULTS

In 1974 a combined EM and magnetic survey was flown over a 6 by 7 mile area centered on the NEC claims. Numerous very long EM conductors are presumed to be formational. Some are related to graphitic zones in the meta-sediments.

The anomalous geochemical values reported by the Bear Slave Operation (Allan *et al.* 1973) were not explained.

PROSPECTING PERMITS 328 AND 329
DuPont of Canada Exploration Ltd.
1111 West Georgia Street
Vancouver, B.C.

76 G/2, G/3
67°07.5'N, 107°00'W

REFERENCES

Allan *et al* (1973); Allan and Cameron (1973); Frith and Hill (1975);
Frith *et al* (1976).

PROPERTY

Prospecting Permit 328
Prospecting Permit 329

76 G/2
76 G/3

LOCATION

The area lies near Casey Lake, 270 miles northeast of Yellowknife (Fig. 22).

HISTORY

Between the application for, and the granting of Permit 328, the 86 NEC claims were staked for Noranda Exploration Company Ltd. within 76 G/2 to cover a geochemical anomaly identified by the Geological Survey of Canada's geochemical investigations in 1972 and 1973 (Allan *et al* 1973), (Allan, Cameron *et al* 1973).

DESCRIPTION

The Permit areas are underlain by metasediments and medium to coarse grained quartz-monzonite which is concordant with the strike of the metasediments. In the northwest part of the area the metasediments are interbedded with choritic schists, phyllites and fine grained mica schists recently interpreted as volcanic rocks (Frith and Hill 1975). They are most abundant within G/3, Prospecting Permit 329. Iron formation, mainly of silicate and sulphide facies southeast of Casey Lake, locally contains thin bands of magnetite.

CURRENT WORK AND RESULTS

Geological mapping at 1:50,000 was completed over more than 90% of the Permit areas, with more detailed work on the gossans on the west side of G/3.

Prospecting southeast of Casey Lake located pyritic meta-chert, pyritic, locally garnetiferous amphibolite, and thin seams of pyritic and

graphitic schist typically containing 0.01-0.40% Zn and 0.02-0.11% Cu. One sample returned an assay of 0.62 oz./ton Au.

Soil and rock sampling on two grids covering the gossans on the west of Prospecting Permit 329 yielded discouraging results. Samples were analyzed for Au, Ag, Cu, Pb and Zn. Prospecting in the northeast quarter of G/3 located encouraging gold values in pyritic amphibolite interbedded with meta-chert.

A magnetometer survey at the north end of Sprain Lake in the northeast part of G/3 reflected the erratic distribution of lenses of magnetite iron formation.

A rock geochemical survey, and scintillometer prospecting over the uranium anomaly reported by the 1972 Bear Slave Operation (Allan *et al.* 1973), (Allan and Cameron 1973) failed to locate mineralization.

PM CLAIMS
Noranda Exploration Company Ltd.
P.O. Box 1619
Yellowknife, N.W.T.
XOE 1HO

76 G/5
65°21'N, 107°04'W

REFERENCES

Frith and Hill (1975); Frith *et al* (1977).

PROPERTY

PM 1-72

LOCATION

The claims are 280 miles northeast of Yellowknife and 30 miles north of Regan Lake (19 Fig. 22).

HISTORY

PM 1-72 were staked in 1974 for Noranda Exploration Company Ltd. on the Hackett-Back River volcanic belt, 17 miles southeast of the Yava deposit.

DESCRIPTION

The claims are underlain mainly by felsic volcanics overlain to the east by greywacke type sediments. Graphitic slates occur locally along the volcanic-sediment contact.

CURRENT WORK AND RESULTS

Combined AEM and aeromagnetic surveys in 1974 along 280 line miles, with a quarter mile line interval over a large area including the claims and 35 line miles with the same line separation across the south end of the claims. Geological mapping, at one inch to one half mile investigated the AEM anomalies.

CAL CLAIMS
Cominco Ltd.
200 Granville Square
Vancouver 2, B.C. V6C 2R2

76 G/5, G/12
65°30'N, 107°45'W

REFERENCES

Frith and Hill (1975); Padgham, Bryan *et al* (1975); Padgham, Sterenberg *et al* (1975).

PROPERTY

CAL 1-53, 55-58, 61-63, 66-68, 72-73, 77-79, 82-83, 86

LOCATION

The claims lie 285 miles northeast of Yellowknife and 32 miles north-northwest of Reagan Lake (20 Fig. 22).

HISTORY

The CAL claims were staked in 1974 for Precambrian Mining Services Ltd. who transferred a 90% interest to Cominco Ltd.

DESCRIPTION

Archean metasediments are exposed along the eastern margin of the property; calcareous andesite, bedded carbonate rock, carbonate-cemented volcanic breccia are exposed in the central part of the claim area; and felsic flows and tuffs in the central and western part. An exhalative origin has been attributed to the bedded carbonate and to the carbonate-cemented breccias.

Chert and silicate iron formation lie between the volcanics and the greywackes.

CURRENT WORK AND RESULTS

The geology of the claims and of an area adjoining to the southwest was mapped at one inch to 2000 feet. A petrologic report describes nine thin sections of typical rocks.

Disseminated to massive pyrite occurs locally in a rhyolite unit.

SASH AND BEE CLAIMS
Noranda Exploration Company Ltd.
P.O. Box 1619
Yellowknife, N.W.T.
XOE 1H0

76 G/6
65°18'N, 107°18'W

REFERENCES

Frith and Hill (1975); Frith *et al* (1977).

PROPERTY

SASH 1-64; BEE 1-35

LOCATION

The claims are near the Back River, 290 miles northeast of Yellowknife (21 Fig. 22).

HISTORY

The claims were staked in 1974 to cover a lake sediment geochemical anomaly.

DESCRIPTION

A vertical to steeply dipping mafic volcanic unit, striking northwest across the SASH and BEE claims, is flanked by greywackes, slatey argillites, phyllites and graphitic slates.

Gossans have formed on the supracrustals particularly near a volcanic-sediment contact. Pyrite, pyrrhotite and magnetite occur in the rusty weathering units with minor sphalerite and chalcopyrite at two localities.

CURRENT WORK AND RESULTS

Geological mapping at one inch to one half mile found that EM conductors identified by an airborne survey are caused by graphitic sediments, a feature which might be suspected from their configuration as defined by the AEM survey.

BILL CLAIMS	76 G/12
Great Plains Development Co. of Canada Ltd.	63°36'N, 107°58'W
715 5 Avenue, S.W.	
Calgary, Alberta T2P 2X7	

REFERENCES

Cameron and Durham (1973, 1974); Padgham, Bryan *et al* (1975).

PROPERTY

BILL 1-12

LOCATION

The property lies 25 miles west-northwest of Beechey Lake, about 290 miles northeast of Yellowknife (23 Fig. 22).

HISTORY

The claims were staked by Great Plains Development Co. of Canada Ltd. in 1973.

DESCRIPTION

The area is underlain by metavolcanic rocks of the Yellowknife Supergroup intruded to the west by granitic rocks.

Felsic metavolcanics in the northeast corner of the property host several small gossans containing up to 5-10% massive pyrite, with pyrrhotite

and chalcopyrite. A felsic horizon passing diagonally through the property has minor gossans containing minor disseminated pyrite. Mafic metavolcanics, the main rock type on the claims, locally contain 10% pyrite as massive blebs up to one inch in diameter.

CURRENT WORK AND RESULTS

The property was prospected and mapped at a scale of 1 inch to 1000 feet and a geological map covering 10 square miles was compiled at one inch to one half mile.

PAT CLAIMS
Noranda Exploration Company Ltd.
P.O. Box 1619
Yellowknife, N.W.T.
XOE 1H0

76 G/12
65°31'N, 107°55'W

REFERENCES

Frith and Hill (1975); Padgham, Bryan *et al* (1975).

PROPERTY

PAT 1-13

LOCATION

The claims are 290 miles northeast of Yellowknife (22 Fig. 22). Wheel equipped STOL aircraft may land on an esker immediately south of the PAT claims.

HISTORY

The claims were staked in 1974 to cover EM conductors located by a regional airborne survey.

DESCRIPTION

The PAT group is in a portion of the Hackett River volcanic belt that is folded between the noses of two plutons, which are satellites of the main intrusive complex bordering the belt to the west. As a result there is considerable variability in foliation attitudes in the volcanics which are dominantly felsic with lenses of more mafic and more silicious material locally (Padgham, Bryan *et al* 1975). Outcrop is not abundant on the claims which are partly in a river valley.

CURRENT WORK AND RESULTS

In 1974 three grids were laid out on the PAT group to provide a reference frame for ground testing of EM conductors.

Geological mapping at one inch to 200 feet on one grid and part of a second found northwesterly striking mafic and felsic volcanics intercalated with greywacke and graphitic sediments. Intrusives are also reported. Gossan float containing pyrite, pyrrhotite and chalcopyrite was noted on PAT 9, and a pyritic gossan was found farther northwest.

All three grids were surveyed with a horizontal loop shootback EM technique and two grids were surveyed also with vertical loop EM. One of

the conductors located by the EM surveys coincides with an exposure of graphitic sediments.

ANIE CLAIMS
Noranda Exploration Company Ltd.
P.O. Box 1619
Yellowknife, N.W.T.
XOE 1H0

76 G/12
65°38'N, 107°55'W

REFERENCES

Frith and Hill (1975); Henderson (1975); Padgham, Bryan *et al* (1975).

PROPERTY

ANIE 1-20

LOCATION

The claims are 293 miles northeast of Yellowknife (24 Fig. 22).

HISTORY

The claims were staked in 1974 to cover EM conductors located by a regional airborne survey.

DESCRIPTION

The ANIE claims are underlain by northwesterly striking Archean greywacke with interbedded banded magnetite iron formation and graphitic slate along the western boundary of the claim block. The slates form a narrow steep walled valley that can be traced for some miles to the southeast. They mark the contact with the volcanic rocks to the west.

CURRENT WORK AND RESULTS

Geological mapping at one inch to a half mile on the ANIE claims showed that the EM conductor coincides with a 50-foot wide northwesterly striking unit of interbedded graphitic slates and magnetite-chert iron formation. Intermittent patches of gossan have developed along this unit.

INTERIOR PLAINS REGION - PINE POINT DISTRICT

The Interior Plains are a vast area in which the Precambrian Shield is covered by flat lying Paleozoic carbonates, in part overlain by extensive younger clastics derived by erosion of the ancestral Cordilleran geanticline to the west. Included in this region is the Pine Point District, the source of the major portion of the Northwest Territories' yearly mineral production. Much of the exploration in this area is on Pine Point Mines Limited mineral leases and such information is rarely made public in more than summary form. Because of extensive overburden, the flat lying attitude of the host rocks, and the nature of the lead-zinc mineralization, IP surveys followed by drilling of any anomalies outlined and wide spaced grid drilling, are the main exploration techniques.

The Pine Point area is one of the few in the Territories that is sufficiently well serviced by roads so that aircraft are unnecessary for access. In the winter when the widespread swamps and muskegs are frozen, most parts of the area are easily reached by snowmobile or larger tracked vehicles from the main highways.

A map, Figure 23, shows the locations of drill holes reported for assessment credit during 1974 by Pine Point Mines Ltd. This represents only a small fraction of Pine Point Mines Ltd. 1974 exploration expenditure of 1.3 million dollars. Figure 23 lists and locates 21 of 173 wide spaced and 67 close spaced drill holes proposed for 1974. None of the IP surveys conducted during the year were recorded for assessment purposes.

PINE POINT EXPLORATION
Pine Point Mines Ltd.
Pine Point, N.W.T.
XOE OWO

85 A/13, B/10, 11, 16
60°50'N, 114°29'W

REFERENCES

Douglas and Norris (1974); Norris (1965); Padgham *et al* (1976); Skall (1972, 1975).

PROPERTY

TC 1-145

85 A/13
60°57'N, 113°55'W

LOCATION

The claim group is approximately 17 miles east of the village of Pine Point just south of Great Slave Lake. Highway No. 6 from Pine Point to Fort Resolution crosses the claims (Fig. 23).

HISTORY

The claims were staked in June 1972 for Pine Point Mines Ltd.

DESCRIPTION

The claim group is underlain by limestone, dolomite and shale of the Middle Devonian Pine Point Formation (Douglas and Norris 1974; Norris 1965).

CURRENT WORK AND RESULTS

In 1974, 553 feet were drilled in three holes; apparently this was follow-up to 1973 drilling reported by Padgham *et al* (1976).

PROPERTY

AUD 63-72, 76-91, 96-120, 123
SAND 11-17, 24-68, 75-91, 97-100

85 B/10
60°43'N, 114°45'W

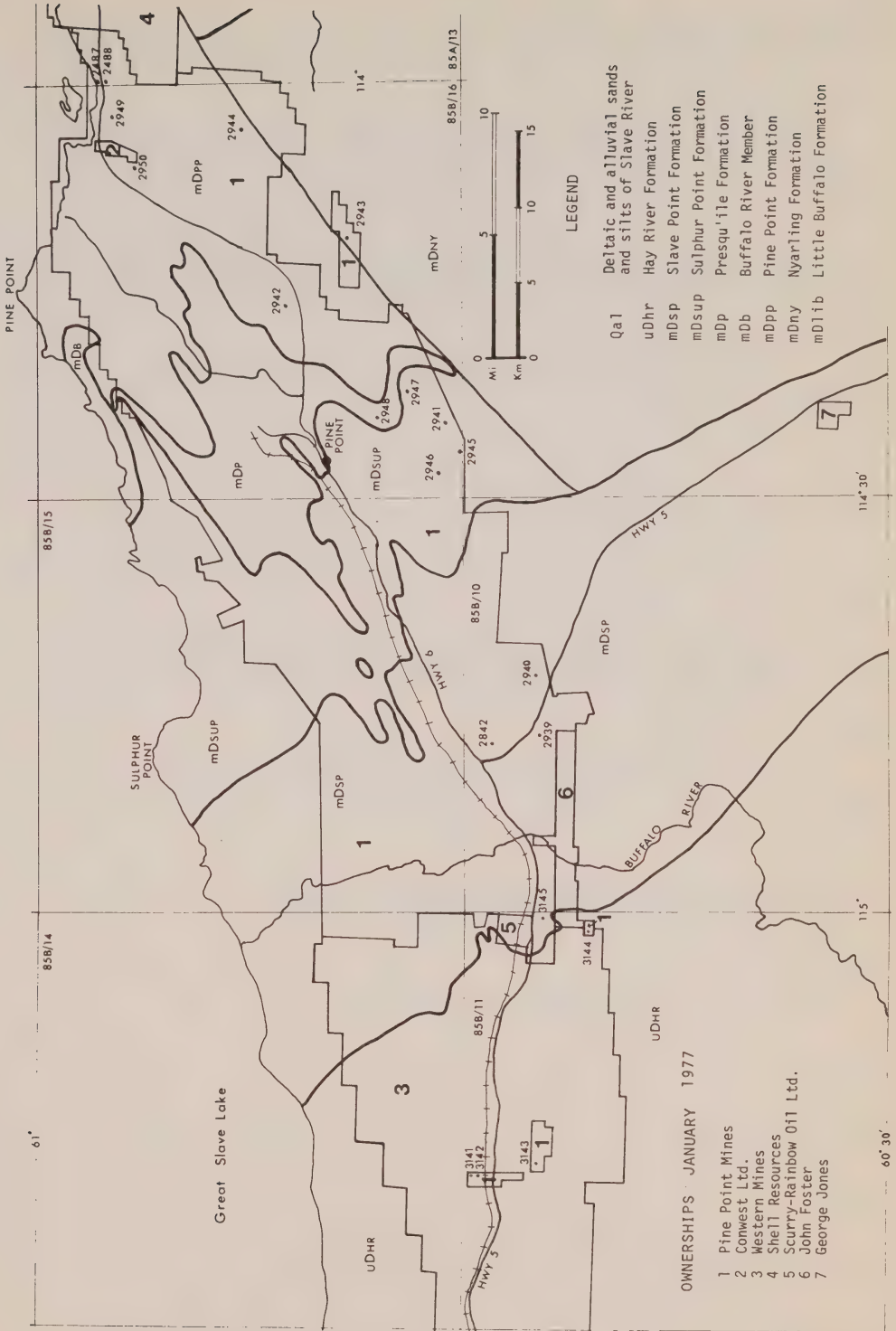
LOCATION

The AUD and SAND groups lie a few miles south of the Hay River-Pine

Figure 23. On facing page. Geological sketch map showing areas held under mineral claims at Pine Point and the locations of drill holes submitted for assessment credit, Pine Point District, 1974. All holes were drilled by Pine Point Mines Limited. They represent a small part of the total exploration and development drilling in the Pine Point Area by Pine Point Mines Limited.

DATA ON DIAMOND DRILL HOLES LOCATED ON FIGURE 23

Claim Name	DDH #	Footage	NTS 85
TC 1	2489	125	A/13
TC 2	2488	105	
TC 1	2487	323	
AUD 66-67	2842	885	B/10
SAND 75	2939	245	
SAND 67-68	2940	905	
DONKEY 36	3141	1065	B/11
DONKEY 28	3142	1075	
DONKEY 42	3143	760	
GW 2	3144	1065	
AHT 21	3145	1020	
TAN 67 & 69	2941	245	B/16
JEAN 45-46	2942	495	
TK 12 & 24	2943	445	
ZOT 1	2944	205	
TAN 25 & 28	2945	252	
JEAN 33	2946	246	
KL 32	2947	295	
KL 446	2948	535	
CW 31	2949	193	
CW 8	2950	190	



Point Highway, on either side of the Fort Smith Highway, near the Fort Smith turn-off (Fig. 23).

HISTORY

The AUD and SAND groups were staked in 1970. The southernmost parts of the original groups have lapsed. Some of the claims were taken to lease in 1975.

DESCRIPTION

The claims lie on the south side of the westward extension of the Pine Point barrier complex, along the south hinge zone (Skall 1975).

CURRENT WORK AND RESULTS

In 1974, three holes totaling 2035 feet were drilled for assessment purposes.

PROPERTY

DONKEY 13, 20-22, 27-30, 35-38, 41-58	85 B/11
GWT 1-4, AHT 11-27	60°44'N, 115°21'W
	60°43'N, 115°01'W

LOCATION

The two blocks of DONKEY claims are situated along and just south of mile 20 of the N.W.T. Highway 5 and the GWT and AHT claims along and south of mile 30 (Fig. 23).

HISTORY

The GWT claims were staked in 1967 and the DONKEY and AHT groups in 1968.

DESCRIPTION

The claim groups lie along the western extension of the Pine Point barrier complex in the vicinity of the main hinge zone.

CURRENT WORK AND RESULTS

Five holes drilled in 1974 totaled 4985 feet.

PROPERTY

CW 4-10, 17-37	85 B/16
TAN 1-120; JEAN 1-70	60°45'N, to 61°N and
KL 1-47; ZOT 1-39	114°W to 114°30'W

LOCATION

The claims are a few miles south or east of Pine Point in NTS area 85 B/16 (Fig. 23).

HISTORY

The TAN claims were staked in 1969, the JEAN and ZOT in 1970, the KL in late 1971 and the CW in 1972.

DESCRIPTION

Most of the claims are underlain by the Middle Devonian Pine Point Formation of Douglas and Norris (1974) and Norris (1965).

CURRENT WORK AND RESULTS

Several thousand feet of reconnaissance diamond drilling was done on the properties for assessment purposes. No significant mineralization was reported.

NAHANNI REGION

The Nahanni District Geologist monitored exploration throughout the Cordilleran Province and in adjacent parts of the Interior Plains immediately to the east.

Exploration in the Cordillera, at a low ebb prior to 1972, increased tremendously following Canex-Placer's Howards Pass lead-zinc discovery announced in late 1972. Further increases resulted from the widespread search for carbonate hosted lead-zinc deposits in the Mackenzie Mountains. Exploration in this large area has gradually spread farther afield, moving into the Gayna River area in 1974. Lead-zinc exploration is tapering off (1975-1976) but is being replaced by extensive copper exploration in Proterozoic strata of the Mackenzie Arch. Exploration in 1974 was more widespread than in 1973. Godlin Lakes, the Gayna River, Wrigley, Howards Pass (with adjacent parts of the Upper Nahanni Valley), and the general MacMillan Pass area were centres of extensive exploration. Maps showing properties and the general geology together with brief descriptions of the regional geology and means of access are provided for each of these districts. A regional map (Figure 24) shows the areas covered by the districts. Properties not included in one of the five districts are described immediately below this introduction.

Renewed interest in the copper potential of the Helikian sequences at the core of the Mackenzie Arch was apparent in 1974. This continued into 1975 and 1976 with very extensive staking and exploration.

Access to the Nahanni Region properties may be by road, parts of the Mackenzie-Liard River system, or by the use of short landing strips. Locally flat topped ridges or gravel bars can be used by aircraft equipped with large tires, but many localities are practically accessible only by helicopter, although nearby lakes suitable for fixed wing aircraft may facilitate helicopter operations.

RINO GROUP
Messrs. Andrew and Becker
Seattle, Washington
U.S.A.

Tungsten
95 E/2
61°10'N, 126°38'W

REFERENCES

Gabrielse *et al.* (1973).

PROPERTY

RINO 1-6

LOCATION

The property is south of the Nahanni River near Skinboat Lakes, in the Selwyn Mountains 190 miles west of Fort Simpson and 90 miles west of Nahanni Butte.

HISTORY

The RINO claims were staked in 1970. Trenches were blasted on the claims in 1972.

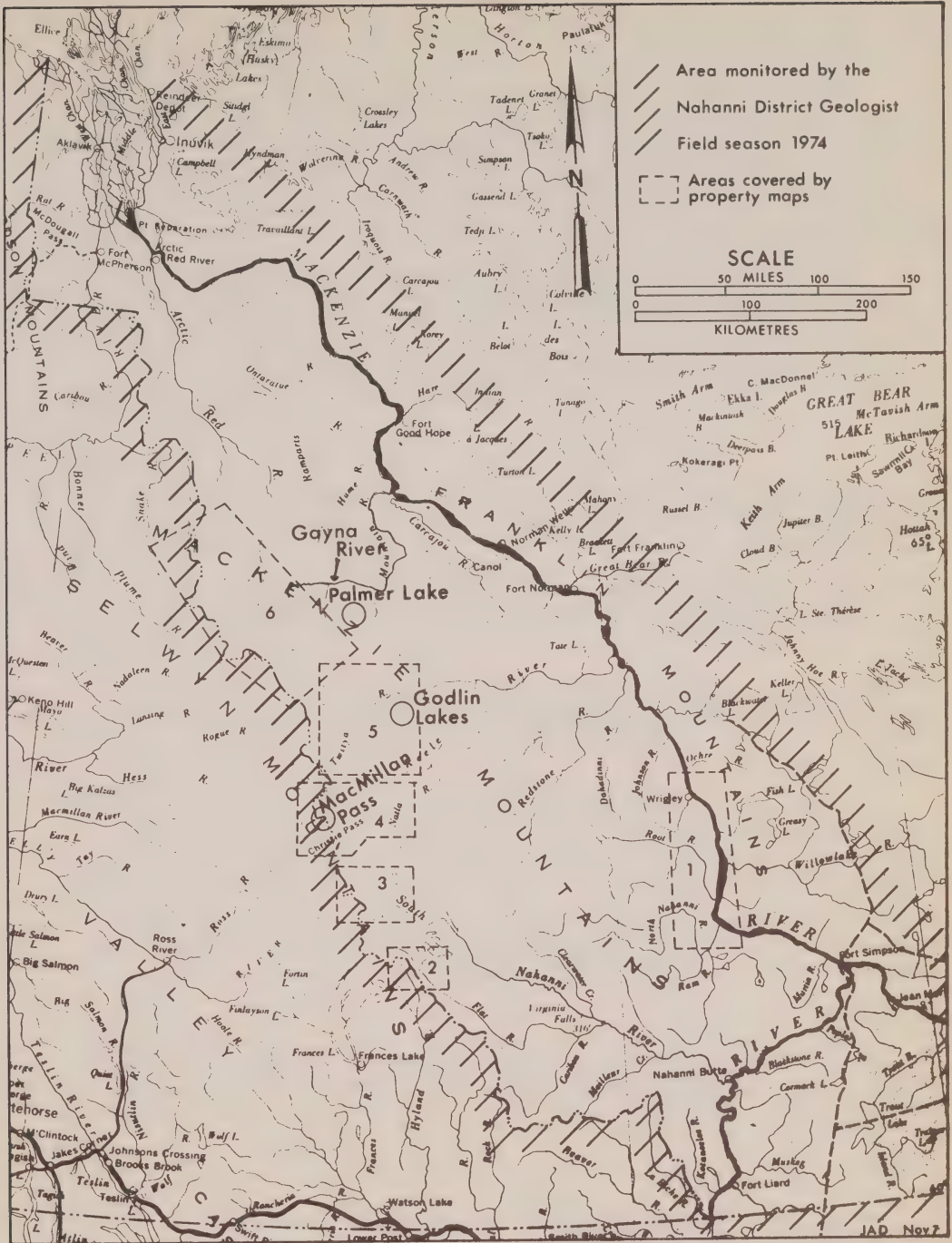


Figure 24. Nahanni Region showing areas covered by larger scale location maps.
 1. Wrigley Area (Fig.25) 2. Howards Pass District (Fig.26)
 3. Macmillan Pass District (Fig.27) 4. Godlin Lakes District (Fig.28) 5. Gayna River District (Fig.29) 6. Tungsten-Flat River Area (Fig.31)

DESCRIPTION

The claims, which are in a northwest trending belt of clastic and carbonate rocks intruded by Cretaceous quartz monzonite stocks, are underlain by Middle Ordovician Sunblood Formation consisting of grey dolomite, mottled limestone and minor mafic volcanics. Large quartz monzonite stocks outcrop a mile north and south of the claims.

CURRENT WORK AND RESULTS

Soil samples, taken every 100 feet along grid lines covering an area of one claim, were analyzed for copper, zinc, molybdenum, silver and tungsten. A few anomalous values were recorded, but their importance was not evident.

A Ronka EM-16 survey outlined a conductor, but this has not been explained.

TICKER CLAIM	Gold
B.D. Taylor	95 E/8
Yellowknife, N.W.T.	61°19'N, 126°24'W

REFERENCES

Gabrielse *et al.* (1965).

PROPERTY

TICKER 1

LOCATION

The claim covers part of MacMillan Lake, in the Selwyn Mountains 180 miles west of Fort Simpson.

HISTORY

The South Nahanni River and McLeod Creek area have a colourful folklore involving placer gold. Although trace amounts of fine placer gold have been found there are no reports of successful placer mining.

DESCRIPTION

The claim is located in a northwest trending belt of clastics and carbonates, mainly overburden-covered, intruded by Cretaceous quartz-monzonite stocks. They are underlain by Cambrian and Ordovician limestone and dolomite (Gabrielse *et al.* 1965).

CURRENT WORK AND RESULTS

A small scale dredging operation was conducted on MacMillan Lake by B.D. Taylor during part of the summer. A small amount of gold and a dark grey metal was recovered. The latter is claimed to be platinum by the operator, but as yet this has not been confirmed.

PRAIRIE CREEK PROPERTY: ASH, LCM, WES GROUPS
Cadillac Exploration Ltd.
570, 407 - 8 Avenue S.W.
Calgary, Alberta T2P 1E5

Silver, Lead, Zinc
95 F/10
61°33'N, 124°47'W

REFERENCES

Douglas and Norris (1961a); Thorpe (1972); Padgham, Kennedy *et al.* (1975).

PROPERTY

ASH 1-68, LCM 1-8, WES 1-134

LOCATION

The Cadillac property is located on Prairie Creek, a tributary of the South Nahanni River. A gravel airstrip, at the mine, is suitable for small fixed winged aircraft.

HISTORY

Early in 1974 Cadillac Exploration Ltd. resolved their legal differences with Penarroya Canada Ltee. and regained title to the Cadillac property.

Extensive prospecting, diamond drilling and underground development of this property, between 1966 and 1968 is described by Thorpe (1972).

DESCRIPTION

The Cadillac deposit is a series of northerly trending argentiferous lead-zinc veins cutting limestone, shale and dolomite of lower-mid Paleozoic age (Douglas and Norris 1961a).

CURRENT WORK AND RESULTS

During 1974 Cadillac refurbished their mining camp on Prairie Creek, cleared access roads to the main showings and fortified the dike surrounding the camp. A few of the trenches on the main showings were cleaned out and extended.

MA CLAIMS
Cominco Ltd.
200 Granville Square
Vancouver, B.C. V6C 2R2

Lead, Zinc
95 L/3
62°05'N, 127°12'W

REFERENCES

Gabrielse *et al.* (1965).

PROPERTY

MA 1-176

LOCATION

The MA group is located approximately 10 miles east of Glacier Lake and immediately east of the South Nahanni River in the Mackenzie Mountains.

HISTORY

The MA group was staked during 1974 to cover mineralization found by Cominco's regional exploration crews.

DESCRIPTION

The MA group is in a northwest trending arcuate belt of Hadrynian to Cretaceous carbonates and clastics represented on the claims by northerly striking Cambrian to Silurian limestone, dolomite and shale (units 21, 22 and 23, Gabrielse *et al.* 1965).

CURRENT WORK AND RESULTS

Results of preliminary prospecting and sampling initiated during staking are not available.

SB CLAIMS
Cominco Ltd.
2700 200 Granville Square
Vancouver, B.C. V6C 2R2

Lead, Zinc, Silver
95 L/13
62°14'N, 126°22'W

REFERENCES

Gabrielse *et al.* (1965); Gabrielse *et al.* (1973).

PROPERTY

SB 1-31

LOCATION

The claims are located approximately 120 miles west of Fort Simpson and 130 miles northeast of Watson Lake.

HISTORY

Prospecting in this area by the Nahanni Sixty Syndicate resulted in the staking of the McBean property, RAM and JOHN claims, and the Sorokowsky property, STAN and GEO claims, by R. McBean in September 1960. During 1972, 17 holes totaling 2080 feet drilled on the McBean property gossan indicated that it represents a totally oxidized replacement deposit about 600 feet long, 200 feet wide and 100 feet deep with grades from 1% to 2% Zn.

The Sorokowsky showing was mapped and trenched in 1961 and taken to lease in 1970. It was optioned to Cerro Mining Corp. Ltd. in 1970-72. Several gossans, the longest measuring 20 feet by 35 feet, are found over a strike length of several thousand feet. A second mineralized zone consists of several small areas of gossan and/or float one half mile to the north.

DESCRIPTION

The properties are underlain by Ordovician-Silurian and Devonian limestone and dolomite folded into a northwest striking anticline over the Redstone Arch. Regional thrust faults on the east flank of the Redstone Arch repeat part of the Paleozoic sequence to the southeast.

CURRENT WORK AND RESULTS

These showings were found by regional exploration in 1974. Cursory prospecting has covered some of the claim area.

AB, CAB, DAB, EAB, BB CLAIMS
Welcome North Mines Ltd.
1161 Melville Street
Vancouver, B.C. V6E 2X7

Lead, Zinc
106 C/16, F/1
64°59'N, 132°27'W

REFERENCES

Blusson (1974).

PROPERTY

AB 1-270; CAB 1-4, 9-10, 19-60; DAB 1-20; EAB 1-20; BB 1-88

LOCATION

The CAB claims are located 50 miles north of Bonnet Plume Lake and 150 miles northeast of Mayo (12 Fig. 29, page 218). Fixed-wing float-equipped aircraft may be used to reach the few lakes and large rivers in the area from where a helicopter is needed to provide easy local access.

HISTORY

The CAB, AB, DAB, EAB and BB claims were staked to cover Pb-Zn mineralization found by Welcome North during their regional exploration program in 1974.

DESCRIPTION

The claim area lies within the Backbone Ranges of the Mackenzie Mountains. The claims are underlain by Cambrian dolomite, sandstone and shale of the Sekwi Formation. On the western portion of the claim area the Sekwi is unconformably overlain by Road River shales but to the east there is a unit of Ordovician to Silurian dolomites and limestones. Westerly striking thrust faults cut these units (Blusson 1974).

Mineralization occurs as fine-grained honey-coloured sphalerite and minor galena within Sekwi dolomite. In some showings the mineralization is finely bedded and seems to be syngenetic whereas in other showings it is coarser-grained and no bedding features can be recognized. Pb-Zn mineralization on the BB group is located within silicified breccia of the Mount Kindle Formation.

CURRENT WORK AND RESULTS

Preliminary prospecting, sampling and some geological mapping was completed over the property. Diamond drilling was started on the CAB claims in early September and was to continue onto the AB group. Geochemical silt sampling was completed over the AB group.

On the CAB group massive sphalerite occurs in conformable layers up to 3 inches thick separated by barren horizons. A chip sample across the mineralized section assayed 4.8% Pb-Zn over 30 feet. A pyrite-rich bed is located 50 feet above the zinc mineralization and forms a gossan which can be

traced intermittently across the property. On the AB and DAB claims massive sphalerite and galena occur in beds and along fracture zones within Sekwi dolomite. The silt sampling program was conducted in creeks adjacent to the main AB showings. Pb values ranged from 50 to 80 ppm. and Zn values ranged from 300 to 600 ppm. Abundant talus cover made bedrock sampling difficult. A chip sample across 100 feet of talus assayed 1.03% Pb and 8.64% Zn. Mineralization has been noted over widths in excess of 100 feet at sporadic intervals along a 3 mile strike length. Selected high grade grab samples assayed up to 0.19% Pb and 7.56% Zn.

MAC GROUP
Welcome North Mines Ltd.
Suite 8
1161 Melville Street
Vancouver, B.C. V6E 2X7

Iron, Phosphate,
Manganese
117 A/8
68°28'N, 136°26'W

REFERENCES

Gabrielse (1957); Young (1972).

PROPERTY

MAC 1-50

LOCATION

The MAC claims are adjacent to the Fish River where it crosses the Yukon border near Mount Davies Gilbert in the northern part of the Richardson Mountains approximately 80 miles west of Inuvik.

HISTORY

F.G. Young (1972) spent several weeks studying Cretaceous stratigraphy in the area, discovered bedded sideritic ironstone and noted the possible economic interest in portions relatively enriched in iron, manganese and phosphate. The MAC group in the N.W.T. and the DELTA and DAWN groups in the adjacent Yukon Territory were staked in April 1974.

DESCRIPTION

The Cretaceous system is represented by 3 distinct sedimentary sequences: a Jurassic to Early Cretaceous (Aptian-Albion) flyschoid clastic wedge and a Late Cretaceous to Early Tertiary molasse-like clastic wedge. Bedded ironstone and shale forms the upper of 4 members of the flyschoid sequence. West of Mount Davies Gilbert this member is over 2800 feet thick. It thins to about 700 feet in the Fish River area to the east where it becomes richer in ironstone as it overlies older members of the sequence to rest unconformably on the lower marginal cratonic sequence.

Chemical and mineral analyses of 2 'random' grab samples of bedded ironstone collected in the Fish River section near the claims are reported by Young (1972). Total iron (reported as Fe₂O₃) was 38.61% and 34.12%; MnO 5.72% and 4.52%; and P₂O₅ 7.85% and 20.00%. Siderite was 55.95% and 31.06%, and apatite 5.94% and 10.75% of these samples.

CURRENT WORK AND RESULTS

Welcome North Mines Ltd. spent several days prospecting and sampling in the area and did preliminary mineralogical, metallurgical and economic studies. This work was jointly sponsored by Bethlehem Copper Corp. Ltd.

WRIGLEY DISTRICT

Exploration for lead-zinc along the Mackenzie River Valley in the Franklin Mountains, which form the front ranges of the Mackenzie Mountains, has had a long history. Showings of lead-zinc on Old Fort Island in the Mackenzie River have been known for many years.

Lower Paleozoic carbonate formations form most of the ridges and cliffs, with recessive shales and locally evaporites on the slopes and in valleys. The structure is dominated by broad synclines and anticlines that are bounded to the east by thrust faults which bring the lower Paleozoic carbonates over younger shales (Fig. 25).

Lead and zinc are found as veins and lenses in the crest of anticlines and in fault breccias. Exploration and prospecting was attracted to this area by such occurrences, and attempts were then made to locate Mississippi Valley type deposits with more tonnage potential.

LOU CLAIMS
Cominco Ltd.
2700 200 Granville Square
Vancouver, B.C. V6C 2R2

Lead, Zinc, Copper
95 J/13
62°53'N, 123°45'W

REFERENCES

Douglas and Norris (1961b); Padgham *et al.* (1976).

PROPERTY

LOU 1-20

LOCATION

The LOU claims are just north of the Root River, approximately 28 miles due south of Wrigley (Fig. 25).

HISTORY

LOU claims 1-20 were recorded in March 1973 to cover mineralization found by prospecting in 1972. Detailed prospecting, geological mapping and rock sampling on the claims during 1973 located numerous lead, zinc and copper occurrences in bedrock and float.

DESCRIPTION

The LOU group lies within the Franklin Mountains, along the eastern front of the Mackenzie Mountains. The claims are situated along a north striking ridge of Middle Devonian shale and carbonate, thrust faulted over Upper Devonian shale, and are underlain by Middle Devonian Nahanni Formation

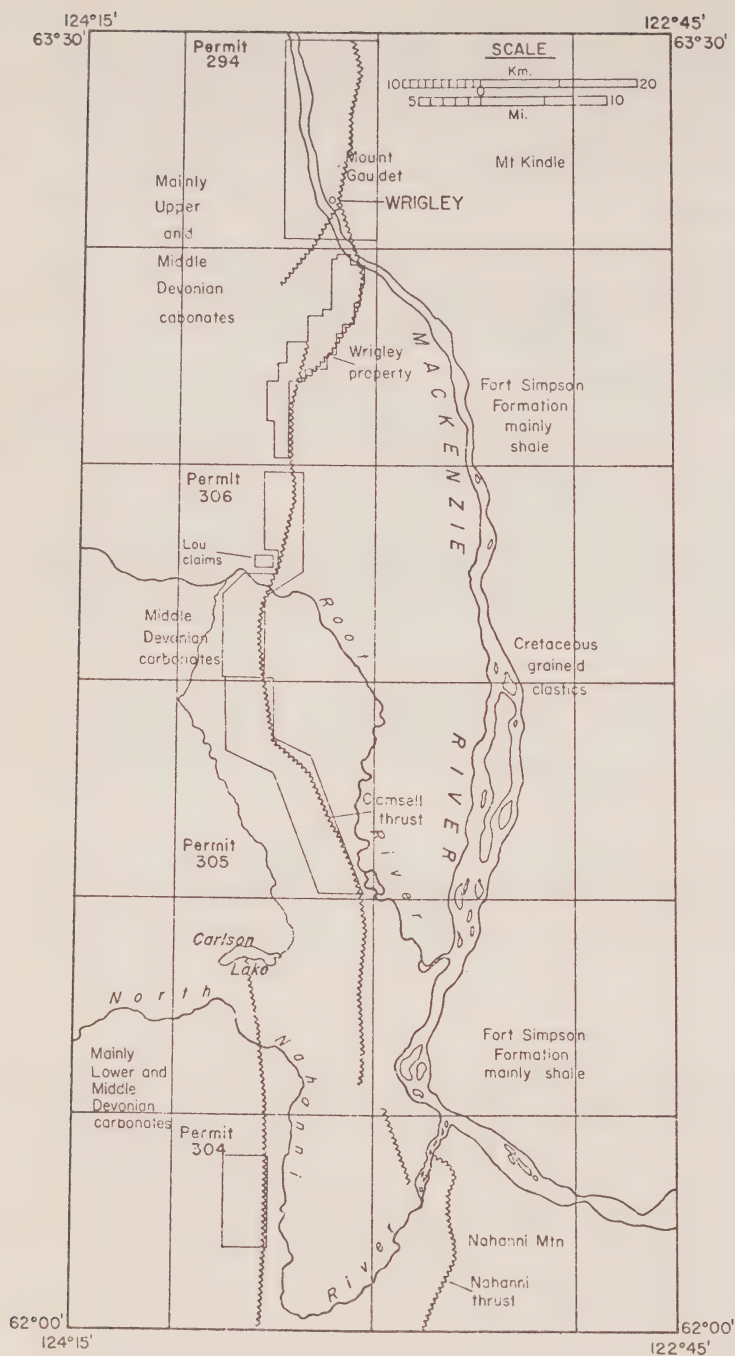


Figure 25. Prospecting permits and claim groups in the Wrigley area.

Unnamed, outlined areas represent portions of the Prospecting Permits held in 1975. These have now expired.

limestone (Douglas and Norris 1961b) which has been folded by northwest striking and northwest plunging anticlines and synclines. A northwest trending bifurcating fault crosses the property.

CURRENT WORK AND RESULTS

During 1974 prospecting, sampling, geological mapping and soil geochemical sampling continued in an attempt to outline more mineralization.

PROSPECTING PERMITS 304, 305 AND 306
Giant Yellowknife Mines Ltd.
Yellowknife, N.W.T.
XOE 1HO

Lead, Zinc
95 J/4, 12, 13
62°00'N, 124°00'W

REFERENCES

Douglas and Norris (1961a, 1961b, 1963); Padgham *et al* (1976).

PROPERTY

Prospecting Permit 304	95 J/4
Prospecting Permit 305	95 J/12
Prospecting Permit 306	95 J/13

LOCATION

Prospecting Permits 304, 305 and 306 lie between the North Nahanni and Root River in the front ranges of the Mackenzie Mountains west of Cam-sell Bend (Fig. 25).

HISTORY

Union Oil Ltd. acquired the permits in 1973 to cover favourable Devonian carbonate formations. In 1974 Giant Yellowknife Mines Ltd. became partners with Union Oil and as operators contracted Trigg, Woollett and Associates to explore the permits.

DESCRIPTION

The area lies along the eastern side of the Mackenzie Mountains and is underlain predominantly by Cambrian to Devonian dolomite, shale, limestone and sandstone. The Middle Devonian Manetoe Formation, a coarse-grained dolomite, and the Nahanni Formation limestone, are of particular interest.

CURRENT WORK AND RESULTS

Prospecting, sampling and geological mapping covered anomalies outlined by geochemistry in 1973.

Smithsonite mineralization was found in narrow fractures within Middle Devonian Nahanni Formation limestone.

WRIGLEY PROPERTY
Cominco Ltd.
200 Granville Square
Vancouver 2, B.C.

Lead, Zinc
95 0/4
62°15'N, 123°35'W

REFERENCES

Douglas and Norris (1963); Padgham *et al* (1976).

PROPERTY

Wrigley Property comprises 567 claims which are listed on Figure 25.

LOCATION

The northern boundary of this large claim block is located approximately 6 miles due south of Wrigley (Fig. 25).

HISTORY

The area has been sporadically prospected for base metals for many years (Padgham *et al* 1976). Cominco Ltd. optioned the LEO claims and then staked the FB claims in August, 1970 to cover lead-zinc showings found by their prospectors earlier that summer. Trenching and prospecting in 1971 extended the mineralization and Cominco staked the FRY claims and obtained Prospecting Permit 273 covering 95 0/4. VLF surveys, IP surveys, prospecting and diamond drilling in 1972 and 1973 explored the showings.

DESCRIPTION

The properties lie along the eastern edge of the Mackenzie Mountains. A north to northeasterly trending ridge which is divided into three sets of hills on its northeastern extension is the main area of interest. The ridge is underlain by Middle Devonian Nahanni Formation limestone dipping 30° to 40° to the west. This limestone is massive, black, fossiliferous, argillaceous and has a fetid smell when freshly broken. The base of the Nahanni Formation is marked by a one foot thick silty laminated limestone and is underlain by Headless Formation shale which is relatively thin in this area and usually poorly exposed. The eastern part of the ridge is underlain by Arnica Formation dolomite which dips steeply to the east. A north to northeasterly trending fault, the Camsell Thrust (Fig. 7a), located along the east side of the ridge, has brought Middle Devonian sediments into contact with Upper Devonian shales, siltstones and limestones.

CURRENT WORK AND RESULTS

Cominco continued detailed geological mapping on their permit area and conducted extensive diamond drilling to test the down dip extension of surface mineralization outlined by prospecting.

Although a number of high grade intersections were obtained, the mineralization was considered too discontinuous to be of immediate economic significance.

PROSPECTING PERMITS 294 AND 295
Giant Yellowknife Mines Ltd.
P.O. Box 40
Commerce Court West
Toronto, Ontario

Lead, Zinc
95 0/5, 6
63°20'N, 123°30'W

REFERENCES

Douglas and Norris (1963); Padgham et al (1976).

PROPERTY

Prospecting Permit 294	95 0/5
Prospecting Permit 295	95 0/6

LOCATION

The permit areas are on the Mackenzie River just north of the village of Fort Wrigley which has a gravel airstrip adequate for aircraft up to DC-3 size (Fig. 5).

HISTORY

Permits 294 and 295 were issued in 1973 after exploration had discovered lead-zinc showings just south of the area. Copper showings have been reported in the Mount Cap area in 95 0/6 (Douglas and Norris 1961).

A stream silt survey by Geophoto Services Ltd. in 1973 located Pb-Zn geochemical anomalies almost two miles long.

DESCRIPTION

The permits cover areas along the eastern edge of the Mackenzie Mountains and parts of the Franklin Mountains. Upper Devonian shale, sandstone and minor limestone (Douglas and Norris 1963) underlie most of the west half of the permit areas. A northerly striking thrust fault crossing the centre of the area has upfaulted and exposed a band of Middle Devonian Nahanni Formation limestone and Bear Rock Formation brecciated dolomite (Douglas and Norris 1963). The eastern part of the area is underlain by northwesterly striking Middle Devonian to Proterozoic shale, limestone, dolomite and sandstone which becomes progressively older toward the east where their outcrop is cut off by a north striking thrust fault. Upper Devonian and Cretaceous shale (Douglas and Norris 1963) are exposed east of the thrust fault near the border of the permit areas.

CURRENT WORK AND RESULTS

Detailed stream silt sampling, conducted over anomalies found during the 1973 reconnaissance study, outlined a smithsonite-galena showing. Soil geochemical surveying, geophysical surveying and prospecting were conducted in the showing area. Drilling was attempted but stopped because of an early freeze-up.

As a result of this work, significant lead-zinc mineralization was found at Mount Gaudet and Smithson Creek.

At Mount Gaudet minor amounts of sphalerite, smithsonite and galena were discovered in the Bear Rock Formation, over a strike length of 2500 feet. Most of this mineralization is related to fracturing and faulting but some in float occurs as blobs and disseminations.

At Smithson Creek, smithsonite was found in dolomite, altered dolomite and limey dolomite of the Bear Rock Formation. It occurs as irregular masses and to a lesser extent along fractures. A representative sample assayed 0.26% Pb and 50.8% Zn. Abundant, near massive galena, found in scree, assayed 56.0% B, 10.75% Zn and 1.6 oz./ton Ag.

HOWARDS PASS DISTRICT

In 1972, after a number of years of geological exploration in the Cordillera, Canex-Placer Ltd. made a major lead-zinc discovery in the Howards Pass area on the Yukon-Northwest Territories border. Numerous claim blocks were tied onto the Canex-Placer property or staked farther afield along the strike of the favourable shale units and a general resurgence of interest and a great increase in the level of prospecting and exploration took place in the Cordilleran Province during the following years.

Since 1973 at least 25 properties have been staked and explored in this general area, only one of which existed prior to the Canex-Placer staking.

Most of the claim groups are easily reached by rotary wing aircraft from the STOL-port recently constructed in Howards Pass on the Yukon portion of the Canex-Placer holdings, or from Summit Lake in the Yukon which is adequate for float equipped aircraft. Two somewhat smaller lakes also suitable for bush aircraft, Gordon Lake, 19 miles southeast and Cominco Lake, 8 miles northerly from Howards Pass, afford local access. Forty miles of winter road now connects the Howards Pass area with Tungsten and the Tungsten-Watson Lake highway. At present, this road is only suitable for tracked or all-terrain vehicles but in the near future the winter road will be replaced by a highway presently in the planning stage. Howards Pass is 475 miles due west of Yellowknife, and 310 miles westerly of Fort Simpson, the nearest major centre in the Northwest Territories. Watson Lake, 160 miles to the south and Ross River, 110 miles to the west are in the Yukon Territory.

The Howards Pass district lies near the eastern border of the Selwyn Mountains, a northwest trending arcuate belt of Helikian to Mississippian clastic and carbonate beds which have been intruded by Cretaceous quartz-monzonite stocks. The sedimentary rocks strike generally northwesterly and have been folded into a series of anticlines and synclines. These folds have been cut by northwesterly and northeasterly striking faults.

The host rock to the extensive lead-zinc bodies on the Canex-Placer property is a black, graptolitic and locally pyritic mudstone, a phase of the Upper Devonian to Mississippian Road River shale. A wavy-banded limestone lying beneath the host rock contains layers less than two inches thick of locally boudinaged mudstone within a grey fine grained limestone. The fine grained state of the ore minerals and the recessive nature of the host black shales make traditional prospecting difficult, furthermore until recently the area at the height of land between the Yukon and the Mackenzie District was considered too remote and difficult of access to attract exploration.

There is only one major published source of geological data on the Howards Pass District, the 1:250,000 map of the Nahanni Area by Green *et al.* (1968). Exploration in the area prior to 1974 is described by Padgham *et al.* (1976). Properties in the Howards Pass District are shown on a geological sketch, Figure 26.

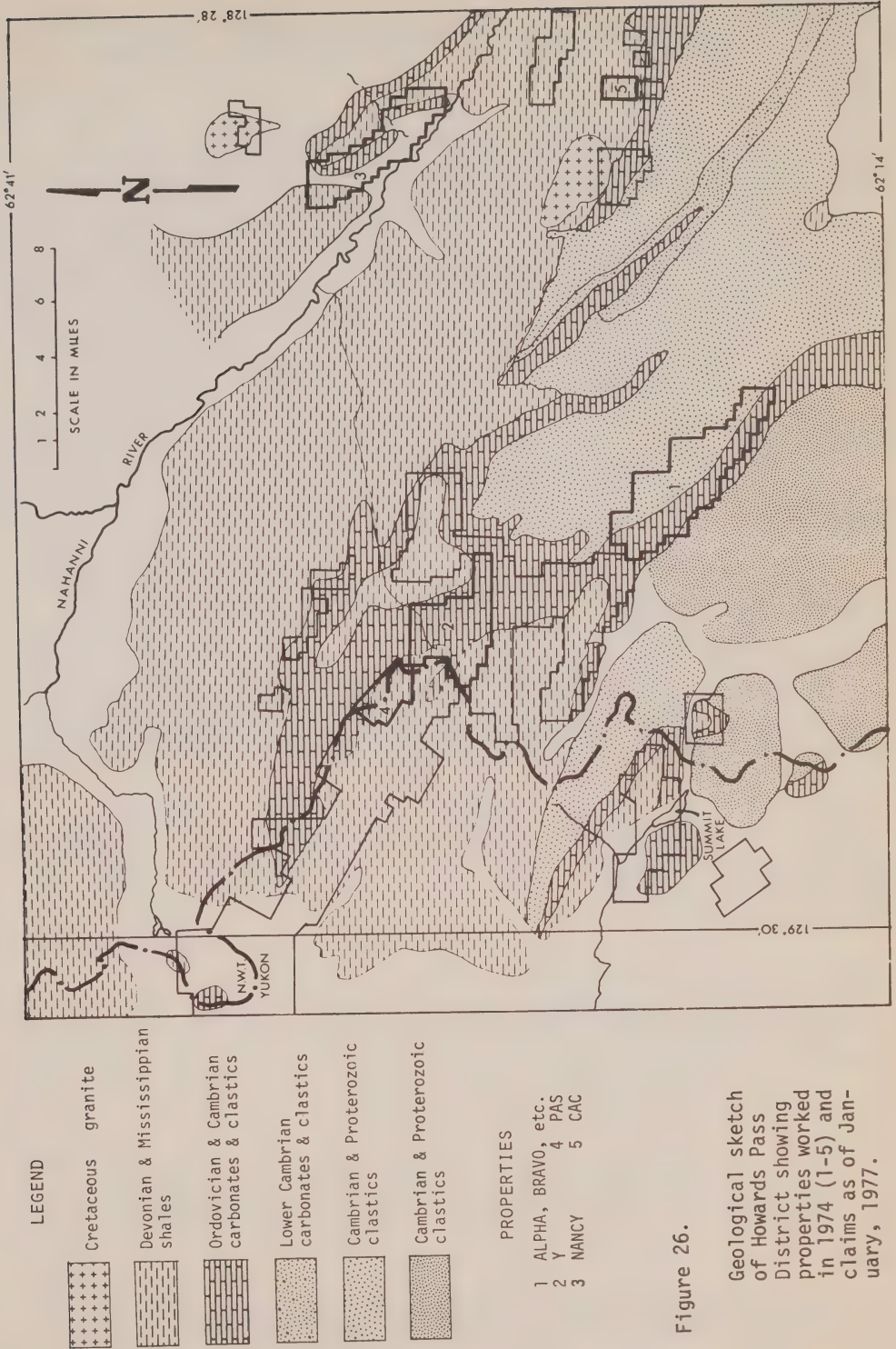


Figure 26.

Geological sketch of Howards Pass District showing properties worked in 1974 (1-5) and claims as of January, 1977.

PAS CLAIMS
Dynasty Explorations Ltd.
330 Marine Building
355 Burrard Street
Vancouver 1, B.C.

Lead, Zinc
105 I/6
62°28'N, 129°04'W

REFERENCES

Green *et al.* (1968); Padgham *et al.* (1976).

PROPERTY

PAS 49-50

LOCATION

These claims are near the STOL airstrip at Howards Pass on the Yukon-N.W.T. border (4 Fig. 26).

HISTORY

PAS 49-50 were staked, mapped and sampled in 1973.

DESCRIPTION

The PAS claims are underlain by Cambrian or older limestone, siltstone and dolomite (Green *et al.* 1968) which forms the core of a major northwest striking anticline.

CURRENT WORK AND RESULTS

In 1974 a trench 340 feet long, 15 feet wide and 4 feet deep was bulldozed across the boundary of PAS 49 and 50. The trench cut through frozen overburden and bottomed in bedrock. Samples assayed from trace to 0.32% Pb over 20 feet and trace to 0.7% Zn over 20 feet.

Y GROUP
Canex-Placer Ltd.
700, 1030 West Georgia Street
Vancouver, B.C.

Lead, Zinc
105 I/6
62°28'N, 129°10'W

REFERENCES

Green *et al.* (1968); Padgham *et al.* (1976).

PROPERTY

Y 6-24, 27-30, 35-50, 60, 62-79, 88-113, 122-162

LOCATION

The 125 Y claims straddle the N.W.T.-Yukon border at Howards Pass (2 Fig. 26).

HISTORY

The Y claims were staked in 1972 to cover a large geochemical anomaly found by Canex-Placer Ltd. during a multi-year regional exploration program.

Extensive prospecting, trenching, geological mapping, detailed soil sampling and drilling during 1973 located extensive lead-zinc mineralization in Road River shales.

DESCRIPTION

The main mineralized zone is located on the southwesterly-facing slope of a rounded, northwesterly striking, overburden covered ridge. Only rarely is bedrock exposed, although frost heave and scree slopes indicated the general rock type. Trenches bulldozed across the face of the hill have exposed deeply weathered black graptolitic 'shale'. Such trench exposures are not reliable sources of structural information because of the varying effects of soil creep and solifluction on the hill side. As a result of deep weathering, the mineralized areas are marked only by a faint rusty gossan or locally by small amounts of secondary mineralization such as hydrozincite or smithsonite-cerussite.

Fine-grained galena and very fine-grained sphalerite occur within black, graptolitic and locally pyritic 'shale'. Galena is disseminated throughout the shale and is readily visible as slightly coarser grains along shear planes. Sphalerite is very fine-grained and is rarely seen in hand specimen. Limited testing suggests that the lead-zinc concentration and ratios vary considerably between showings and the silver content is consistently low. Apparently, mineralization is not limited to one horizon within the host formation.

The host rock, a black graptolitic, pyritic 'shale', is considered to be a mudstone by company geologists and the shaly texture is present only in the weathered zone. Lenses of limestone within the mudstone measure a few feet in thickness and are probably less than 100 feet long. The mudstone also contains calcareous, pyritic nodules. The pyrite in these nodules is well layered which may indicate a biogenic origin. Beneath the host rock lies a wavy-banded limestone containing mudstone wisps or boudinage less than 2 inches thick.

The mineralized area lies in Road River shale with underlying banded limestone (Green *et al.* 1968) on the southwest limb of a syncline. The host rock strikes to the northwest and was thought to dip steeply to the north-east. Geologists working in the area are finding the structure much more complicated than was first anticipated.

CURRENT WORK AND RESULTS

During 1974 Canex greatly reduced exploration expenditures in the Summit Lake area. Detailed geological mapping was extended on the Y claims and some new trenches were bulldozed. One drill tested targets on both sides of the border. Continued work has indicated the shales in this area contain very large tonnages of fine grained lead-zinc mineralization.

ALPHA, BRAVO, CHAR, DELTA, ECHO GROUPS
Imperial Oil Ltd.
111 St. Clair Avenue W.
Toronto, Ontario M4V 1N5

Lead, Zinc
105 I/6, 7
62°20'N, 129°00'W

REFERENCES

Green *et al.* (1968); Padgham *et al.* (1976).

PROPERTY

ALPHA 1-36, BRAVO 1-36, CHAR 1-36, DELTA 1-36, ECHO 1-32

LOCATION

This block of 176 claims lies 12 miles south of Howards Pass in the Selwyn Mountains (1 Fig. 26).

HISTORY

The claims were located in August 1973 to cover discoveries made by prospecting in the region of extensive lead-zinc discoveries made the previous year (Padgham *et al.* 1976). Golden Ram Resources, the owners, optioned these claims to Imperial Oil, but the option was relinquished after one year.

DESCRIPTION

A regional geological map (Green *et al.* 1968) indicates the claims are underlain by a northwesterly striking unit of Cambrian limestone, siltstone, minor dolomite and sandstone, bounded on the southwest by quartzite, conglomerate, sandstone, shale and phyllite, and by slates and phyllites to the northeast. Near the main showing, the Fern Zone, the area is underlain by northwesterly striking, southwesterly dipping schist and quartzite.

Galena and sphalerite occur along fractures within a highly fractured 400-foot thick carbonate unit that is exposed for 2000 feet.

CURRENT WORK AND RESULTS

The property was tested by geological mapping, prospecting, stream bank and silt sampling and by detailed soil sampling and magnetometer surveying of the mineralized zone.

Geochemistry outlined an anomaly over the mineralization but did not locate additional mineralization. Samples taken from the main showing assayed as high as 24% Pb but in general contain less than 1% combined lead, zinc and copper. The mineralization is low grade and erratic and probably of no economic interest.

CAC GROUP
Amax Exploration Inc.
7 King Street East
Toronto, Ontario M5C 1A2

Tungsten
105 I/7
62°22'N, 128°33'W

REFERENCES

Green *et al.* (1968).

PROPERTY

CAC 1-15

LOCATION

The CAC claims are 25 miles southeast of Howards Pass (5 Fig. 26).

HISTORY

The CAC claims were staked in August 1973 to cover mineralization discovered by prospecting and geochemical exploration that summer.

DESCRIPTION

The CAC claims lie within the Selwyn Mountains, a northwest trending belt of clastics and carbonates intruded by Cretaceous quartz-monzonite stocks, which have well developed contact aureoles.

The local stratigraphic sequence is as follows: banded Cambrian limestone (Green *et al.* 1968), black graptolitic shale and limestone containing dolomite bands of the Road River Formation, and Upper Devonian and Mississippian rusty indurated shale (Green *et al.* 1968).

On the northwest half of the property the banded Cambrian limestone is intruded by a quartz-monzonite stock. All three units have been slightly folded and domed around this stock. In the contact aureole three types of skarn were mapped: banded green diopside-garnet skarn, banded dark green epidote-garnet-diopside skarn, and coarse-grained light green calc-silicate skarn. Scheelite occurs in all three skarn types, but is concentrated within the dark green epidote-garnet-diopside skarn.

CURRENT WORK AND RESULTS

Geological mapping, at the scale of 1 inch to 400 feet, and chip sampling delineated two mineralized zones, the North Zone and the Central Zone. The North Zone mineralization comprises scheelite, 3% disseminated pyrrhotite and traces of pyrite and chalcopyrite within skarn. The best mineralization in the dark green skarn assayed 0.46% W_3 over 36 feet. The Central Zone consists of isolated skarn within the dolomitic portions of the banded limestone. Samples from this zone assayed up to 0.02% W_3 over 30 feet.

NANCY CLAIMS
Quintana Minerals Corp.
1215 Two Bentall Centre
Vancouver, B.C.

Lead, Zinc, Copper,
Silver
105 I/10
62°30'N, 128°38'W

REFERENCES

Green *et al.* (1968).

PROPERTY

NANCY 1-114

LOCATION

NANCY 1-114 are 40 miles north-northwest of Tungsten on the east side of the South Nahanni River in the Selwyn Mountains (3 Fig. 26).

HISTORY

The NANCY claims were staked in July 1973 to cover a geochemical anomaly delineated that year.

DESCRIPTION

The NANCY claims are in a northwest trending belt of Hadrynian to Devonian clastics and carbonates intruded by Cretaceous quartz-monzonite stocks.

The local stratigraphy is as follows: mid-Ordovician to Silurian dolomites and limestone of the Sunblood Formation, Upper Ordovician to Silurian interbedded grey to black shales and brown silty to sandy dolomite of the Road River Formation, massive, bioclastic Middle Devonian Nahanni Formation, and Devonian-Mississippian black shales and argillites. These units are folded into an anticline which plunges gently northwest.

CURRENT WORK AND RESULTS

Prospecting, geological mapping and soil geochemical sampling of the NANCY claims located irregular blebs and veinlets of galena, sphalerite and pyrite along fractures and bedding planes in brecciated dolomite in the Sunblood Formation. Showings generally never have more than 200 feet of strike length and the average grade ranges from 1% to 2% combined lead and zinc.

Soil samples were analyzed for Cu, Pb, Zn and Ag but anomalies were not outlined and most high values were sporadic and appear to result from scattered mineralization.

GUN AND SAND GROUPS
Dynasty Explorations Ltd.
330 - 355 Burrard Street
Vancouver, B.C.

Lead, Zinc
105 I/15, 16
62°53'N, 128°31'W

REFERENCES

Green *et al.* (1968).

PROPERTY

GUN 17-23, 33-110; SAND 1-16, 21-68

LOCATION

The SAND and GUN claims are 15 miles southeast of O'Grady Lake, the nearest good landing site for fixed wing aircraft. They lie a few miles north of the east side of Figure 26.

HISTORY

The SAND and GUN claims were staked in 1973 to cover zinc mineralization found during regional geochemical exploration by Dynasty Explorations Ltd.

DESCRIPTION

The claim groups lie along the eastern edge of the Selwyn Mountains, a northwesterly striking belt of clastics and carbonates intruded by Cretaceous quartz-monzonite stocks. The stratigraphic sequence is: siltstone; Lower Cambrian quartzite, dolomite and shale; Middle Cambrian siltstone, limestone and dolomite; Upper Cambrian and Ordovician limestone, siltstone and dolomite; Middle Ordovician to Silurian limestone and dolomite; and Middle Devonian Headless and Funeral Formations limestone and shale (Green *et al.* 1968). A

large quartz-monzonite stock is located on the western boundary of the claim group. Northerly and northeasterly faults cut the stratigraphic sequence.

Sphalerite and smithsonite occur within limestone of unit 9a, and wavy-banded limestone identified as unit 4a (Green *et al.* 1968). Massive sphalerite occurs in the nose of small folds within limestone adjacent to the quartz-monzonite stock. The smithsonite was found in scree above the wavy-banded unit.

CURRENT WORK AND RESULTS

Prospecting, geological mapping, trenching, sampling, soil geochemistry and diamond drilling explored the claims. A total of 3100 soil samples were taken at 100-foot stations along grid lines spaced 400 feet apart. A number of Pb, Zn and Cu anomalies were outlined and tested by six trenches and eight EX diamond drill holes, totaling 675 feet. Samples from the trenches and the drill core assayed less than 1% combined Pb-Zn-Cu.

Traces of mineralization were found along fractures within wavy-banded limestone and in limestone adjacent to the quartz-monzonite. None of the mineralization is considered economically significant.

MACMILLAN PASS DISTRICT

Since scheelite was found in the metamorphic aureole of a quartz-monzonite pluton just north of MacMillan Pass in 1962, exploration has continued intermittently in the district which contains, as well, the large TOM lead-zinc deposit a few miles to the south in the Yukon Territory. Targets in the district continue to be tungsten in skarn deposits around plutons, and lead-zinc, locally with barite, in the sedimentary rocks.

A geological sketch map, Figure 27, shows active properties during 1974, and claims in good standing as of January 1977. Access to properties near MacMillan Pass is possible by road or suitable aircraft which can land on an airstrip near the Pass, or in places along the Canol Road.

KEN CLAIMS
Canada Tungsten Mining Corp.
80 Niobe Street
North Vancouver, B.C.

Tungsten
105 O/8
63°16'N, 130°09'W

REFERENCES

Blusson (1974); Padgham *et al.* (1976).

PROPERTY

KEN 31-52, 60

LOCATION

The KEN group is on the N.W.T.-Yukon border approximately three miles west of MacMillan Pass on the Canol Road (1 Fig. 27).

HISTORY

The KEN claims were staked, prospected, mapped, and the silts and soils were sampled for geochemistry in 1973 for Tye Lake Resources and Titan-Polaris Mines Ltd.

DESCRIPTION

The KEN claims are near the eastern boundary of the Selwyn Mountains, a northwest trending belt of Helikian to Mississippian clastics and carbonates and intrusive Cretaceous quartz-monzonite stocks. Argillite, shale and limestone, which are thought to be part of the Ordovician-Silurian Road River Formation, underlie the property. These units strike 090° and although complicated by local folding, generally dip 30° - 70° N. The southwest corner of the property is underlain by Cretaceous quartz-monzonite which has altered the argillite unit to hornfels. A northwest striking aplite dike is exposed for 200 feet on the northeast portion of the claim group.

CURRENT WORK AND RESULTS

TURAM, EM and magnetic surveys delineated a number of anomalies on the property, five of these have a coincident magnetic response.

ACHE, CAL, SHOOT GROUPS
Regency Resources Ltd.
534 789 West Pender Street
Vancouver, B.C.

Tungsten
105 0/8
 $63^{\circ}17'N$, $130^{\circ}05'W$

REFERENCES

Blusson (1974)

PROPERTY

SHOOT 1-16; ACHE 1-24; CAL 1-33, 37-51, 55-69

LOCATION

The claims are five miles north of MacMillan Pass which is on the Canol Road at the N.W.T.-Yukon border (2 Fig. 27).

HISTORY

These claims were staked in May 1973 to cover possible extensions of the Mactung tungsten deposit located on claims adjoining to the south.

DESCRIPTION

MacMillan Pass is in the Selwyn Mountains, a northwest trending belt of carbonates and clastics and Cretaceous quartz-monzonite stocks. The claims are underlain by a Hadrynian grit unit (Blusson 1974) which consists of slate, sandstone and conglomerate with minor grey dolomite and limestone. Regional mapping is incomplete and part of the claims may be underlain by Ordovician and Silurian interbedded argillite, limestone and their metamorphosed equivalents tentatively correlated with the Road River Formation. Units on the southern portion of the claim groups have been folded into an east striking anticline. Cretaceous quartz-monzonite stocks are adjacent to the northern and southwestern limits of the claim group.

CURRENT WORK AND RESULTS

Magnetometer readings were taken along the southern and northern portions of the claim area at 200-foot stations along grid lines 500 feet apart.

KEE GROUP
Dynasty Explorations Ltd.
330 Marine Building
355 Burrard Street
Vancouver 1, B.C.

Zinc, Lead
105 P/3
63°11'N, 129°27'W

REFERENCES

Blusson (1971).

PROPERTY

KEE 24-83

LOCATION

The KEE claims are in the Mackenzie Mountains 12 miles southeast of Mile 222 of the Canol Road, approximately 95 miles northwest of Tungsten, N.W.T. (3 Fig. 27).

HISTORY

The KEE group was staked in September 1973 on the basis of slightly anomalous lead values obtained during a regional silt sampling program.

DESCRIPTION

The KEE claims are underlain by folded Upper Devonian and (?) Mississippian black shales, argillites and shaly limestones which are in fault contact, to the north and south, with buff weathering dolomite of the Lower Cambrian Sekwi Formation (Blusson 1971). Scattered outcrops of graptolitic shales on the claims may be Upper Ordovician-Silurian Road River Formation.

CURRENT WORK AND RESULTS

Lead anomalies defined by 750 soil samples collected on the KEE group range as high as 250 ppm, nearly five times the local background of 57 ppm. Sporadic zinc values were found above a 500 ppm background. The anomalies are apparently related to two major faults which cross the claim group.

Neither lead nor zinc mineralization was encountered on the KEE claims.

KEELE GROUP
Cominco Ltd.
2700 200 Granville Square
Vancouver, B.C.

Lead, Zinc
105 P/4
63°10'N, 129°32'W

REFERENCES

Blusson (1971).

PROPERTY

KEELE 1-58

LOCATION

The KEELE group lies 20 miles east of MacMillan Pass (4 Fig. 27).

HISTORY

The KEELE claims were staked to cover lead-zinc mineralization found by regional prospecting during 1973.

DESCRIPTION

The KEELE claims cover the nose of a westerly plunging upright anticline near the boundary between the Selwyn and Mackenzie Mountains. The local stratigraphic sequence is: Cambrian or earlier dark grey to brown slate and phyllite; orange and grey weathering Sekwi Formation dolomite; black argillite, graptolitic shale and calcareous siltstone, probably Ordovician-Silurian Road River Formation and dark grey to black argillite, shale and siltstone (unit 26 Blusson 1971).

CURRENT WORK AND RESULTS

Geological mapping and prospecting on the claim group were hampered by lack of outcrop, but three showings were outlined, two within the Road River Formation and one within the argillite, shale and siltstone of unit 26. The main showing located on the northern limb of the anticline at the base of the Road River Formation consists of thin layers of fine grained red sphalerite in black thin-bedded calcareous siltstones. Smithsonite is common on the weathered surface. Trenches from this zone gave samples that contained 0.01% Pb and 0.55% Zn over 26 feet.

Another showing consists of three 2-foot thick beds of calcareous siltstone containing smithsonite and minor fine-grained sphalerite. A sample across this zone assayed 0.01% Pb and 0.32% Zn over 15 feet. The third showing consists of weathered sulphide float within unit 26. A grab sample from this zone assayed 0.01% Pb and 2.04% Zn.

ELI CLAIMS
Trident Resources Inc.
107 325 Howe Street
Vancouver, B.C.

Copper, Lead, Zinc
105 P/1, 2
63°07'N, 128°32'W

REFERENCES

Blusson (1971).

PROPERTY

ELI 1-25

LOCATION

The ELI claims are 20 miles northeast of O'Grady Lake and 50 miles south of Godlin Lakes on the abandoned portion of the Canol Road (5 Fig. 27).

HISTORY

The claims were staked in September 1973 on copper and zinc mineralization found by prospecting and geochemical exploration earlier in the year.

DESCRIPTION

The claims are in the Mackenzie Mountains, a northwest trending arcuate belt of Hadrynian to Cretaceous clastics and carbonates. The west half of the claim group is underlain by Middle Devonian shaly dolomite of the Arnica Formation which has been thrust against Cambrian or older rocks to the east. The southeast portion of the claim area is underlain by Sekwi Formation dolomite and shale which has been folded into a northwesterly striking anticline. The Sekwi Formation is underlain by Lower Cambrian argillaceous sandstone and orthoquartzite (Blusson 1971).

CURRENT WORK AND RESULTS

Geological mapping, prospecting and sampling of the claims located minor hydrozincite in Arnica dolomite, traces of galena in vuggy portions of the Sekwi Formation, and minor chalcocite in float but not in outcrop. Pyrite was found in narrow quartz-calcite veinlets within the Cambrian shale. All samples assayed less than 1% Pb, Zn and Cu.

NAT AND TAN CLAIMS

Bethlehem Copper Corporation Ltd.
2100 1055 West Hastings Street
Vancouver, B.C. V6E 2H8

Lead, Zinc
105 P/8
63°18'N, 128°23'W

REFERENCES

Blusson (1971).

PROPERTY

NAT 1-28
TAN 1-21

LOCATION

The NAT and TAN claims lie 35 miles south of Godlin Lakes and 30 miles northeast of O'Grady Lake (7 and 6 Fig. 27).

HISTORY

The NAT and TAN claims were staked in August 1974 on mineralization found by regional prospecting for Bethlehem Copper.

DESCRIPTION

The claims are in the Mackenzie Mountains, a northwest striking arcuate belt of Hadrynian to Cretaceous clastics and carbonates. The claim area is underlain by a northerly striking Cambrian and older siltstone, shale and dolomite, thick-bedded dolomite and orthoquartzite (Blusson 1971). These units are thrust along northerly striking faults against younger Cambrian and Devonian units to the west.

Disseminated galena and sphalerite occurs in massive dolomite, probably unit 11.

CURRENT WORK AND RESULTS

The results of preliminary prospecting, sampling and geological mapping on the property are unknown.

DAR CLAIMS
Amax Exploration Inc.
601 535 Thurlow Street
Vancouver, B.C.

Lead, Zinc
105 P/8
63°20'N, 128°23'W

REFERENCES

Blusson (1971).

PROPERTY

DAR 1-28

LOCATION

The DAR claims are 30 miles south of Godlin Lakes and 35 miles north-east of O'Grady Lake (8 Fig. 27).

HISTORY

The DAR claims were staked in September 1974. No previous work has been reported on this ground.

DESCRIPTION

The DAR group is along strike, adjacent to Bethlehem Copper's NAT and TAN claims. The mineralization and geology on the DAR group is essentially the same as that on the NAT and TAN claims.

CURRENT WORK AND RESULTS

The results of preliminary prospecting and sampling during staking are unknown.

GODLIN LAKES DISTRICT

Tetrahedrite bearing quartz veins and lead-zinc showings were found some years ago in the Godlin Lakes area, on the abandoned section of the Canol Road 110 miles southwest of the nearest supply and communications centre, Norman Wells. Currently the most important exploration target in the area are small but high grade lead-zinc occurrences localized in fractures produced by folding and thrusting in the Sekwi Formation. They are, therefore, mainly epigenetic deposits, possibly representing metals remobilized into the dolomite from the associated shales which have over large areas unusually high contents of lead and zinc.

Extensive exploration in the Godlin Lakes district resulted in widespread property aquisition during 1972 and, mainly, 1973. To avoid needless repetition a general description of the regional geology and access for the numerous properties in the district is provided here. A map, Figure 28,

shows the general geology of the district and the locations of some of the properties described below.

Godlin Lakes are suitable for float equipped aircraft, except during low water in late summer. To correct this situation, a small dam was constructed at the lake outlet. A rough landing strip near the lakes can be used by most types of bush aircraft.

Godlin Lakes lies near the centre of the Mackenzie Mountains, a broad arcuate belt of northwest trending Helikian to Cretaceous shelf carbonate and clastic formations. Dolomite, limestone, shale and sandstone are the predominate rock types; locally mafic volcanic flows are present. Across the belt the Lower Paleozoic formations undergo a facies change from a shelf environment in the area of the Redstone Arch in the northeast to a basin environment in the Selwyn Mountains in the southwest.

Structural features of the Mackenzie fold belt were produced mainly during the Columbian and Laramide Orogenies in Upper Cretaceous to Oligocene times. There is evidence that deformation also took place before the Cretaceous. The folds are typically broad and short with nearly flat crests and troughs and sharply upturned faulted flanks. Thrust faults formed on the flanks and in the axial regions of the folds produced an estimated 10% shortening.

HORSESHOE CLAIMS
Welcome North Mines Ltd.
301 1035 West Pender Street
Vancouver, B.C.

Lead, Zinc
105 P/6, 11
63°29'N, 129°14'W

REFERENCES

Blusson (1971).

PROPERTY

HORSESHOE 1-36

LOCATION

The HORSESHOE claims are less than a mile south of the Canol Road, 30 miles southwest of Godlin Lakes (1 Fig. 28).

HISTORY

The showings were found and staked in July 1973 by P.S. White, a prospector working for Welcome North Mines.

DESCRIPTION

The HORSESHOE claims are underlain by the Sekwi Formation which is in fault contact with black shale (Blusson 1971).

Galena, sphalerite and pyrite are found in float along the shale-Sekwi Formation contact which strikes 140° and is marked by rusty gossans in the claim area. Outcrop is relatively poor and the extent of the mineralization has not been accurately determined.

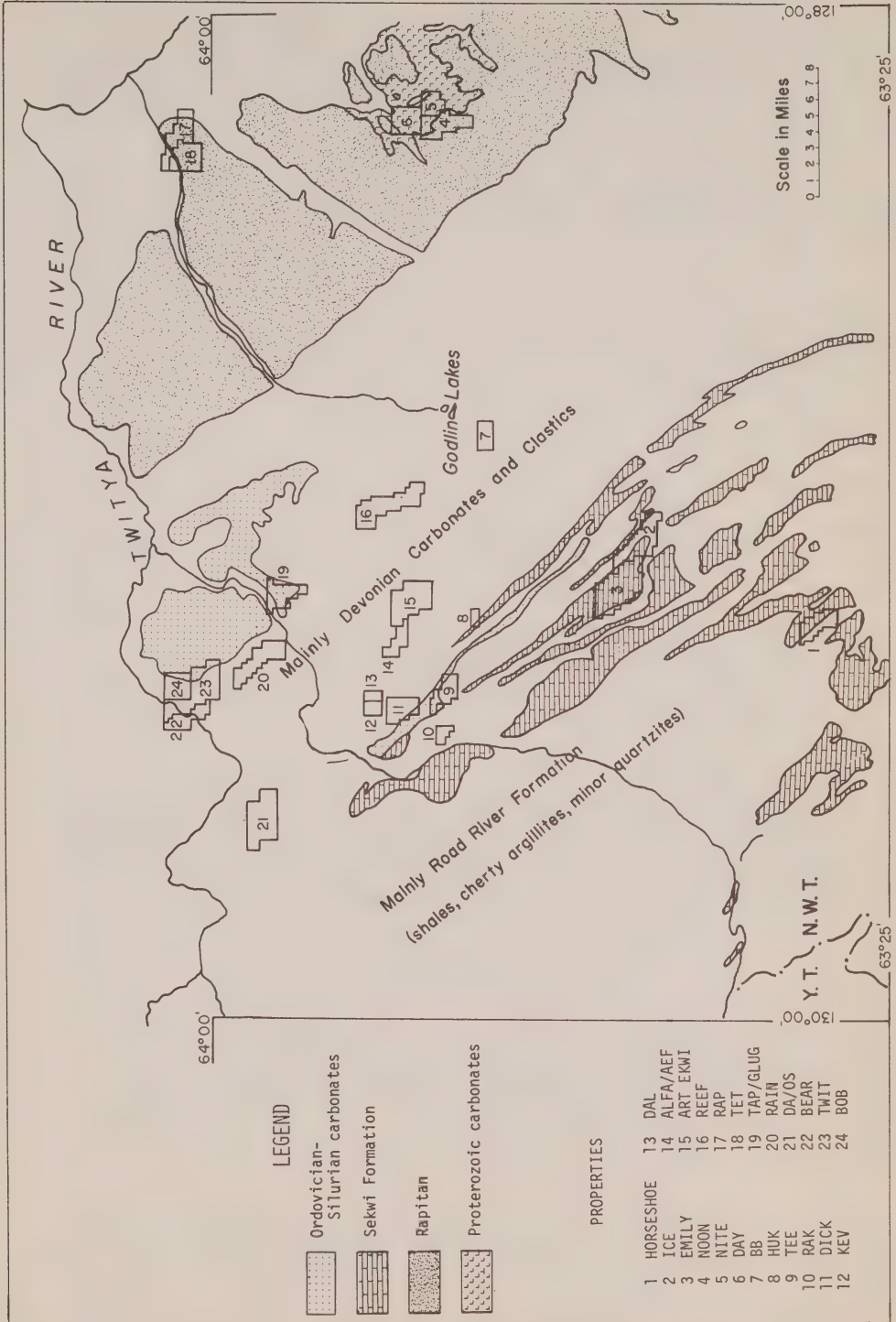


Figure 28. Generalised geology and property location map, Godlin Lakes Region. Geology from Blusson (1974).

CURRENT WORK AND RESULTS

Two trenches were dug into the rusty gossan in an attempt to expose mineralization along the shale-Sekwi contact. The largest, measuring 12 by 15 feet, is 3 feet deep and has uncovered massive pyrite with minor galena and sphalerite in dolomite. A smaller trench 500 feet to the southwest exposes brecciated shaly dolomite in a matrix of calcite, quartz, galena and minor sphalerite.

A soil geochemical survey of the main area of galena float delineated a 3000-foot long anomaly with an average width of 1200 feet. Assays of 5775 ppm lead were recorded.

EMILY AND ICE GROUPS
Geomont Exploration Company Ltd.
Toronto Dominion Centre
Toronto, Ontario M5K 1B3

Lead, Zinc
105 P/10, 11
63°40'N, 129°00'W

REFERENCES

Blusson (1971).

PROPERTY

EMILY 1-78
ICE 1-58

LOCATION

The EMILY and ICE claims are just north of the Canol Road, 14 miles southwest of Godlin Lakes (2, 3 Fig. 28).

HISTORY

The EMILY and ICE claims were staked in 1973 by Welcome North Mines Ltd. Prospecting, geological mapping and sampling located mineralized float in three places on the EMILY claims and seven showings in talus and bedrock on the ICE group. The EMILY and ICE groups were optioned by Geomont Exploration Company Ltd., a subsidiary of Abitibi Paper Co. Ltd.

DESCRIPTION

The EMILY and ICE groups lie within the Mackenzie Mountains, a north-west trending arcuate belt of clastics and carbonates. The major part of the claim group is underlain by northwest striking Lower Cambrian Sekwi Formation, consisting of thick, vuggy to massive, orange weathering dolomite. The Upper Sekwi comprises grey weathering limestone with three laterally persistent recessive shale intercalations. The Sekwi Formation is unconformably overlain by Middle Cambrian and younger recessive shaly limestone and black shale. On the southern portion of the ICE group it has been thrust against a wedge of Lower Cambrian and older orthoquartzite.

Vugs in a drusy dolomite of the Sekwi Formation adjacent to a north-west striking thrust fault contain galena and sphalerite. Mineralization is irregularly distributed: some sections of the drusy dolomite are highly mineralized; others are barren. Minor amounts of pyrobitumen are disseminated throughout the Sekwi dolomite.

CURRENT WORK AND RESULTS

Detailed geological mapping, sampling of 13 sections and 514 feet of diamond drilling in two holes explored the showings. The drill holes did not encounter significant mineralization.

DA AND OS CLAIMS
Jomial Investments Ltd.
Suite 5
932 - 12 Avenue, S.W.
Calgary, Alberta T2R 0J4

Lead, Zinc
105 P/13
63°58'N, 129°33'W

REFERENCES

Blusson (1971).

PROPERTY

DA 1-36; OS 1-72

LOCATION

The OS-DA property is 28 miles northwest of Godlin Lakes on the Twitya River (21 Fig. 28).

HISTORY

There is no evidence of previous work on the ground covered by the OS-DA group which were staked in 1973.

DESCRIPTION

The claims are underlain by a northwest striking conformable sequence of mid-Paleozoic carbonates, Sombre Formation dolomite, Arnica Formation dolomite, Landry Formation bioclastic limestone and Headless Formation limestone. Three northwest striking faults cut the sequence repeating several of the units. Smithsonite, hydrozincite and sporadic galena are widespread in reefoid sections of Arnica dolomite, mostly in vugs with local concentrations along fractures. Hydrozincite was found primarily as a coating on the calcite veinlets that form a halo around the zinc carbonate showings. The main showing consists of four separate mineralized zones; the largest has a maximum width of 200 feet and is over 2000 feet long.

CURRENT WORK AND RESULTS

Samples collected during detailed prospecting and geological mapping in 1974 were consistently low grade, averaging 0.02% Pb and ranging from 0.01% to 0.65% Zn.

GLUG AND TAP CLAIMS
Amax Exploration Inc.
7 King Street East
Toronto, Ontario

Lead, Zinc
105 P/14
63°57'N, 129°12'W

REFERENCES

Blusson (1971).

PROPERTY

GLUG 58-61; TAP 28-46, 48, 49, 51, 52, 66-68, 70, 73

LOCATION

The TAP and GLUG claims are on the south side of the Twitya River, 17 miles northwest of Godlin Lakes along the northeastern side of the Backbone Range of the Mackenzie Mountains (19 Fig. 28).

HISTORY

The property, staked by C.L. Risby for Arrow Inter-American Exploration in 1972, is now owned by Welcome North Mines Ltd., but is held by Amax Exploration Inc. through an exploration agreement. Preliminary geological mapping, silt sampling and prospecting by Welcome North Mines Ltd. covered the ground in August 1973.

DESCRIPTION

The TAP and GLUG groups are underlain by Cambrian and Ordovician Sunblood Formation dolomite, Ordovician and Silurian Whittaker Formation dolomite and Silurian and Devonian Delorme Formation dolomite (Blusson 1971). Two prominent northwest trending faults cross the southwest portion of the property. The southern fault has a horizontal displacement of 4600 feet.

Zinc-lead mineralization occurs in vuggy dolomite near the base of the Whittaker Formation and in veins spatially related to northwest trending faults and shear zones in the Sunblood Formation. Mineralization in the Sunblood Formation occurs discontinuously along strike for 2500 feet and has been divided into two types: massive pyrite veins as much as six inches thick with interconnecting veinlets containing minor fine grained disseminated sphalerite and very minor galena and quartz calcite barite veinlets, generally less than one inch thick, containing blebs of pale amber, green or red sphalerite with lesser amounts of galena.

CURRENT WORK AND RESULTS

Detailed prospecting and 227 feet of packsack drilling in five holes encountered pyrite with sphalerite and galena in dark grey dolomite, and rarely in dolomite cemented sandstone interbeds. The best intersection was less than three feet, ranging between 1% and 2% lead and zinc. Silver values were negligible.

ALF, ALFA, DAL, HUK, KEV CLAIMS
Vestor Explorations Ltd.
1502 11111 - 87 Avenue
Edmonton, Alberta T6G 0X9

Lead, Zinc, Barite
105 P/14
63°47'N, 129°15'W

REFERENCES

Blusson (1971).

PROPERTY

ALFA 1-7; ALF 3-34; DAL 1-36; HUK 1-18; KEV 1-48

LOCATION

This Vestor property lies approximately 15 miles west of Godlin Lakes in the Mackenzie Mountains, and includes 14 ALF-ALFA, 13 DAL, 12 DEV and 8 HUK claims (14, 12, 13, 8 Fig. 28).

HISTORY

The claims were staked in June 1973 during a staking rush in the Godlin Lakes area.

DESCRIPTION

The claims are underlain by Cambrian shale, Upper Ordovician and Silurian Whittaker Formation dolomite, Silurian and Devonian Delorme Formation dolomite, Middle Devonian dolomite and limestone of the Sombre, Arnica, Landry, Headless and Nahanni Formations (Blusson 1971).

CURRENT WORK AND RESULTS

Cursory prospecting and stream silt sampling tested the properties. Scree of brecciated Whittaker Formation dolomite containing yellow and amber sphalerite assayed as much as 30% zinc. Minor occurrences of barite and fluorite were also found.

ART-EKWI CLAIMS
Malabar Silver Mines Ltd.
404 850 West Hastings Street
Vancouver, B.C. V6C 1E1

Lead, Zinc
105 P/14
63°51'N, 129°11'W

REFERENCES

Blusson (1971); Padgham *et al.* (1976).

PROPERTY

ART 1-15
EKWI 1-49

LOCATION

The ART-EKWI groups lie 12 miles northwest of Godlin Lakes (15 Fig. 28).

HISTORY

The ART claims were staked by Pete Risby in 1972 and were transferred to Welcome North Mines in 1973. The EKWI claims were staked by Welcome North in February 1973 to cover possible extensions of the mineralization on the ART claims. Conwest Ltd. optioned, mapped, prospected, trenched, geo-chemically sampled and dropped the option on the ART-EKWI claims in 1973. Malabar Silver Mines Ltd. purchased the property in the spring of 1974.

DESCRIPTION

The ART-EKWI claims are underlain by Devonian limestone, dolomite and shale, Arnica Formation dolomite, Landry Formation limestone, Headless Formation limestone and Nahanni Formation limestone, part of a broad northwest trending syncline on the northeast side of a steeply east dipping, northwest striking thrust fault which cuts across the property (Blusson 1971).

To the southwest, Headless limestone, Nahanni limestone and Devonian shale have been faulted by a branch of the main thrust fault. On the northwest side of the property these formations have been folded into an over-turned anticline.

Mineralization in the Landry Formation between 500 and 1000 feet east of the major thrust fault is believed to be controlled by a high-angle branch fault of the main thrust. The Number 1 showing consists of mineralized scree containing smithsonite and minor galena. Number 2, 3 and 4 showings contain galena and sphalerite which, with calcite, have filled solution enlarged fractures near the base of the Landry Formation. Minor amounts of smithsonite and cerussite are also present.

CURRENT WORK AND RESULTS

Atled Exploration Ltd. drilled four holes on the main mineralized areas for Malabar Silver. They intersected discontinuous fracture zones containing galena and sphalerite within Landry Formation limestone which assayed 43% Zn over 11.5 feet and 24.5% Zn and 4.5% Pb over 21.5 feet.

TEE GROUP
Sicintine Mines Ltd.
1700 1055 West Georgia Street
Vancouver 5, B.C.

Lead, Zinc
105 P/14
63°45'N, 129°19'W

REFERENCES

Blusson (1971); Padgham *et al.* (1976).

PROPERTY

TEE 78-107

LOCATION

The TEE claims lie in the Mackenzie Mountains 16 miles west of Godlin Lakes (9 Fig. 28).

HISTORY

The TEE claims were staked by Welcome North Mines Ltd. in 1973. Part of the claim group was optioned to Bethlehem Copper in September 1973: TEE 78-107 were optioned to Sincintine Mines.

DESCRIPTION

The western part of the TEE group is underlain by northwest striking Cambrian orthoquartzite, argillaceous sandstone, and orange weathering dolomite (Blusson 1971). These Lower Cambrian sequences have been thrust against Middle Cambrian black calcareous shales (Blusson 1971) along a northwest striking fault. A facies change from shale to Whittaker Formation dolomite occurs in the northern and eastern part of the claims. The Ordovician to Silurian age Whittaker Formation is overlain by the Silurian and Devonian Delorme dolomite and the Middle Devonian Sombre Formation dolomite (Blusson 1971).

CURRENT WORK AND RESULTS

Prospecting, sampling and geochemical testing of TEE 78-107 located minor zinc anomalies that are too small to be of economic interest.

DICK, RAIN, RAK, REEF CLAIMS
Amax Exploration Inc.
601 535 Thurlow Street
Vancouver, B.C.

Lead, Zinc
105 P/14, 15
106 A/3
63°55'N, 129°11'W

REFERENCES

Blusson (1971); Padgham *et al.* (1976).

PROPERTY

RAIN 1-50; RAK 1-12; REEF 1-61; DICK 1-36

LOCATION

The Amax claims, 20 miles west and northwest of Godlin Lakes, include 10 RAK, 11 DICK, 16 REEF and 20 RAIN claims (10, 11, 16, 20 Fig. 28).

HISTORY

These claim groups, staked in 1973 to cover showings found by Welcome North's prospecting crews, were optioned to Amax in 1974.

Prospecting, trenching, stream sediment sampling and mapping in 1973 on the RAIN-SNOW group outlined four mineralized zones consisting of minor amounts of galena and red sphalerite as thin fracture fillings. The Number 2 zone, the largest, consists of mineralized scree. Three trenches blasted in this zone did not expose bedrock. A stream sediment survey indicated one anomalous sample which was collected at the mouth of a stream at the main showing.

DESCRIPTION

The northeast corner of the RAIN group is underlain by Whittaker

dolomite which is overlain to the southwest by a stratigraphic succession comprising Delorme limestone, Sombre dolomite, Arnica dolomite, Landry limestone and Headless limestone. The Sombre Formation forms the core of a northwest striking syncline with a parallel striking fault on its southwest side. This fault brings the Sombre Formation into contact with the Arnica Formation. All formations on the property, to the west of the fault, dip 45° to 75° to the southwest.

Galena and sphalerite fill narrow fractures and solution cavities within the Sombre and Arnica Formations near the fault. The sphalerite is either a distinctive red or, more commonly, a pale vitreous green colour.

CURRENT WORK AND RESULTS

Prospecting, trenching, sampling, geological mapping and the diamond drilling of three holes totaling 158 feet tested disseminated galena and sphalerite mineralization in the Whittaker Formation and pyrite veinlets within the Sunblood Formation.

BB CLAIMS
Perry River Nickel Mines Ltd.
5, 932 - 12 Avenue, S.W.
Calgary, Alberta T2R 0J4

Lead, Zinc
105 P/15
63°46'N, 128°15'W

Dyke Mines Ltd.
320, 475 Howe Street
Vancouver, B.C.

REFERENCES

Blusson (1971).

PROPERTY

BB 1-36

LOCATION

The BB group lies two miles west of Godlin Lakes in the Mackenzie Mountains, 122 miles southwest of Norman Wells (7 Fig. 28).

HISTORY

The BB claims were located in June 1973 during staking in the Godlin Lakes area.

DESCRIPTION

The BB claims lie on the southwest limb of a northwest plunging up-right syncline.

The southwest corner of the claim group is underlain by Headless Formation dark grey argillaceous limestone, massive, cliff-forming light grey weathering Nahanni Formation limestone and grey shale. These units (Blusson 1971) strike northwest and dip 50° to 80° to the east.

CURRENT WORK AND RESULTS

Geological mapping was combined with soil sampling at 100-foot intervals on grid lines spaced 400 feet apart.

Most samples contained less than 20 ppm Pb and 200 ppm Zn. Four isolated samples collected from areas underlain by the grey shale contained more than 2000 ppm Zn.

NITE GROUP
Geomont Exploration Company Ltd.
Toronto Dominion Centre
Toronto, Ontario M5K 1B3

Copper
105 P/16
63°50'N, 128°12'W

REFERENCES

Aitken *et al.* (1973); Blusson (1971); Gabrielse *et al.* (1973).

PROPERTY

NITE 1-18, 20-23

LOCATION

The NITE group is approximately 20 miles west of Godlin Lakes, in the Sayunei Range of the Mackenzie Mountains (5 Fig. 28).

HISTORY

The NITE claims, staked by N.J. Dircks in July 1972, were transferred to C.L. Risby in March 1973 and then transferred to Welcome North Mines Ltd. who optioned the claims to Abitibi Paper Company, parent of Geomont Exploration Company Ltd.

Arrow Inter-America Corporation prospected the NITE group in 1972 but no assessment work was filed. In 1973 Welcome North prospected, sampled and mapped the claims.

DESCRIPTION

The NITE group lies in a region of Proterozoic rocks in the northeastern corner of the Sekwi Mountain map-area. In the adjoining Wrigley Lake map-area to the east, the Helikian carbonates have been subdivided into the Little Dal Formation, Redstone River Formation and Coppercap Formation (Gabrielse *et al.* 1973).

The oldest rocks on the claims are unit 4 of Blusson (1971) which have been correlated with the Coppercap Formation. They comprise 1500 feet of massive and grey banded limestone, intraformational conglomerate, silty layers and bituminous limestone. The banded limestone consists of alternating laminae of fine dark grey limestone and lighter grey to brown dolomitic limestone with minor chert units as much as one inch thick. The Coppercap Formation and an overlying unnamed buff to maroon siltstone with a maximum thickness of 650 feet were deformed into a series of upright folds with north-northwesterly striking horizontal axes by the Racklan Orogeny. An angular unconformity separates these units from the overlying Lower Rapitan Formation which comprises a basal conglomerate-sandstone-siltstone sequence

varying in thickness from 150 to 300 feet, a middle dark maroon mudstone-jaspillite as much as 350 feet thick and an upper laminated green siltstone as much as 75 feet thick. The Lower Rapitan is gently folded about axes approximately parallel to those in the pre-Racklan strata and is separated from the Middle Rapitan Formation by a slight angular unconformity.

Only the lower 350 feet of the Middle Rapitan are preserved on the NITE group. This unit, a greenish to brownish-grey conglomeratic mudstone or paraconglomerate, is characterized by a complete lack of sorting.

CURRENT WORK AND RESULTS

The NITE claims were mapped at a scale of 400 feet to the inch. Trenching, sampling and two diamond drill holes totaling 1150 feet tested the showings.

Veins and disseminations of bornite, chalcopyrite and tetrahedrite are found in a 25 to 50-foot thick cherty dolomite within the Coppercap Formation. The best showings occur where the dolomite is truncated by the unconformity and the richest bornite vein concentration is adjacent to a fault.

Clasts of copper-bearing shale are common in the Lower Rapitan conglomerate. Some of the dolomite pebbles and boulders have encrustations of bornite or fractures filled with bornite and chalcopyrite. Laminae of fine grained disseminated chalcopyrite and pyrite appear in the green banded siltstone near the top of the Lower Rapitan. Secondary minerals such as malachite, azurite and chrysocolla are commonly associated with the primary copper minerals.

Five of the main showings within the Coppercap dolomite were sampled. The best assays were 1.03% Cu and 0.09% oz./ton Ag over 55 feet and 1.61% Cu and 0.25 oz./ton Ag over 45 feet. Many of the copper showings were considered too small to be sampled.

Two diamond drill holes collared to test the lateral continuity of the mineralization intersected the favourable dolomite but it was barren. The dolomite was limonitized and sulphides had been completely removed by leaching.

DAY AND NOON CLAIMS
Jomial Investments Ltd.
Suite 5
932 - 12 Avenue, S.W.
Calgary, Alberta T2R 0J4

Copper
105 P/16
63°50'N, 128°15'W

REFERENCES

Aitken *et al.* (1973); Blusson (1971); Gabrielse *et al.* (1973).

PROPERTY

DAY 1-8, 73-107; NOON 8-107

LOCATION

The DAY and NOON claims are in the Sayunei Range of the Mackenzie Mountains, approximately 20 miles east of Godlin Lakes (4, 6 Fig. 28).

HISTORY

The DAY and NOON claims were staked during the summer of 1973 adjacent to the NITE property on which copper mineralization has been located.

DESCRIPTION

The local stratigraphic sequence is: light grey limestone and dolomite (Blusson 1971) which has been subdivided into Little Dal Formation, Redstone River Formation and Coppercap Formation in the adjoining Wrigley Lake map-area (Gabrielse *et al.* 1973); maroon mudstone of the Lower Rapitan Formation; and light green to dark grey conglomeratic, silty and sandy mudstone (Blusson 1971).

The Helikian units were faulted and gently folded into a northwest striking anticline, by pre-Racklan deformation. They are separated from the relatively flat-lying younger formations by an angular unconformity.

CURRENT WORK AND RESULTS

In 1974 the property was mapped and soil samples were collected every 200 feet on grid lines 400 feet apart, with more detailed sampling on areas with anomalous soil copper.

Statistical treatment of the soil chemical data suggest that copper values above 450 ppm over Rapitan clastics and above 600 ppm over Coppercap Formation are anomalous. Such values outlined a 2000-foot long, 1000-foot wide, favourable zone on the southeastern edge of the property. Numerous spot highs were recorded elsewhere.

Chalcopyrite is disseminated in green siltstone near the top of the Lower Rapitan Formation and at the contact between the Lower Rapitan and Little Dal Formations. Numerous minor showings were found in float and outcrop of the dolomite member of the Coppercap Formation. Trenches blasted in the mineralized float areas generally failed to reach bedrock. Samples from one trench assayed 0.29% Cu over 18 feet.

TET AND RAP CLAIMS
Bethlehem Copper Corporation Ltd.
2100 1055 West Hastings Street
Vancouver, B.C.

Copper, Silver, Lead,
Zinc
106 A/1
64°03'N, 128°17'W

REFERENCES

Blusson (1974); Padgham *et al.* (1976).

PROPERTY

39 TET claims; 42 RAP claims

LOCATION

The TET and RAP claims lie along the eastern limit of the Mackenzie Mountains near the confluence of the Godlin and Ekwi Rivers, 25 miles north-east of Godlin Lakes (17, 18 Fig. 28).

HISTORY

The TET claims, staked by P. Risby in 1972 for Arrow Inter-America Corporation, reverted to Risby and were transferred to Welcome North Mines who staked the RAP claims in May 1973 to cover possible extensions of the TET mineralization. The TET-RAP group was subsequently optioned to Bethlehem Copper.

In 1974 prospecting, trenching, geological mapping, geochemical surveys and drilling on the TET-RAP claims outlined three copper showings (Padgham *et al.* 1976).

DESCRIPTION

The central portion of the claim group is underlain by northwest striking Little Dal dolomite in fault contact with Nahanni and Headless Formation limestone and dolomite. These beds dip from 18° to 70° to the southwest and trend parallel to northwest striking thrust faults. They are in contact with Katherine Formation orthoquartzite to the northeast and with Lower Rapitan mudstone to the southwest.

CURRENT WORK AND RESULTS

Five short holes were drilled into the No. 2 anomaly (Padgham *et al.* 1976) found by the 1973 soil geochemical survey to test the Little Dal Formation dolomite.

Bethlehem Copper dropped the option on the TET-RAP claims because drilling found only minor tetrahedrite along fractures.

BEAR AND TWIT CLAIMS
Cominco Ltd.
200 Granville Square
Vancouver 2, B.C.

Lead, Zinc, Silver
106 A/3
64°02'N, 129°22'W

REFERENCES

Blusson (1974); Padgham *et al.* (1976).

PROPERTY

BEAR 1-32; TWIT 1-73

LOCATION

The BEAR-TWIT claims sit astride the Twitya River, 25 miles northwest of Godlin Lakes (22, 23 Fig. 28).

HISTORY

The BEAR claims were staked by B.Y. Kim for Arrow Inter-America Corporation in 1972 and transferred to P. Risby and then to Welcome North Mines early in 1973. Welcome North staked the TWIT claims in February 1973 and optioned the ground to Cominco who did a soil geochemical survey and drilled 14 holes that year (Padgham *et al.* 1976).

DESCRIPTION

The claims are underlain by Ordovician, Silurian and Devonian dolomite, limestone and shale folded into northwest striking synclines and anticlines (Blusson 1974). The northwest striking thrust faults prevalent to the southeast continue across the BEAR-TWIT claims.

Vein, breccia cement, and replacement mineralization have been recognized in the Upper Ordovician and Silurian Whittaker Formation dolomite. Vein type mineralization, galena, sphalerite and minor tetrahedrite within a quartz-calcite matrix, occurs in fractures striking approximately perpendicular to the bedding. The minerals are typically coarse-grained with galena cubes as much as one inch across and sphalerite crystals three inches long being found. Veins may be as much as two feet wide and 20 feet long, and are characteristically erratic and discontinuous. Spacing between individual veins varies from less than a foot to up to 20 feet. A grab sample from one vein assayed 7.5% Pb and 7.57 oz./ton Ag.

Breccia type mineralization is low grade, less than 5% lead-zinc by visual estimate. Fine-grained disseminated sphalerite and minor galena occur in the breccia which has a mottled appearance with the dark coloured breccia chunks rimmed by lighter material near the fractures. The breccia pieces range from one to two cm in width. A bright, resinous yellow mineral which may form on the weathered surface has been identified by Welcome North's geologists as the cadmium mineral greenockite (CdS).

Replacement mineralization comprises aggregates of fine-grained sphalerite and minor galena replacing fossils and fine-grained disseminated galena and sphalerite replacing the host rock, a dark, fairly coarse dolomite containing elongated blebs of white, coarsely crystalline calcite which has replaced the fossils.

Gossans have not formed so it is essential to look at fresh exposures to see mineralization, and even then the sphalerite may be difficult to recognize.

CURRENT WORK AND RESULTS

In 1974 four AQ drill holes totaling 1952 feet tested lead-zinc mineralization in Upper Ordovician Whittaker Formation and Silurian Delorme Formation dolomites and brecciated dolomite.

Wide intersections of generally low grade argentiferous galena and sphalerite within fractures and vugs and lenses in brecciated dolomite were encountered in all drill holes. In the first hole mineralization from 215 feet to 350 feet contained a 5-foot interval grading 1.03 oz./ton Ag, 3% Pb and 8% Zn; a 6-foot interval grading 2.30 oz./ton Ag, 7% Pb and 13% Zn; a one-foot interval grading 24.9 oz./ton Ag, 72% Pb and 9% Zn; and a 7-foot interval grading 0.29 oz./ton Ag, 0.01% Pb and 48% Zn. The third hole intersected almost continuous mineralization from 250 to 640 feet that contained 9 feet grading 13.5 oz./ton Ag, 37% Pb and 4% Zn and 10 feet grading 0.8 oz./ton Ag, 24% Pb and 3% Zn.

BOB CLAIMS
Jomial Investments Ltd.
Suite 5
932 - 12 Avenue, S.W.
Calgary, Alberta T2R 0J4

Lead, Zinc
106 A/3
64°03'N, 129°21'W

REFERENCES

Blusson (1974).

PROPERTY

BOB 1-8, 73-100

LOCATION

The BOB claims are in the Mackenzie Mountains 28 miles northwest of Godlin Lakes (24 Fig. 28).

HISTORY

The BOB claims, staked in the summer of 1973 during a staking rush in the Godlin Lakes area, adjoin the northern boundary of the BEAR-TWIT claims.

DESCRIPTION

The stratigraphic sequence in the area comprises Cambrian to Ordovician flaggy dolomite and limestone, and Upper Ordovician to Silurian massive vuggy reefoid dolomite of the Mount Kindle Formation (Blusson 1974). On the BOB claims these units have been folded into a broad northwest striking anticline.

Galena, sphalerite, smithsonite and hydrozincite are found in fractures and vuggy zones in both units. Minor calcite, quartz and muscovite may occur with the mineralization.

CURRENT WORK AND RESULTS

Prospecting and geological mapping of the property located a number of small lead-zinc showings. The largest, as much as 10 feet thick and 100 feet long, is in the flaggy dolomite and limestone. It grades less than 1% combined Pb-Zn. A small azurite showing in Mount Kindle dolomites is not considered of economic importance.

GAYNA RIVER DISTRICT

In 1973 lead-zinc discoveries in Helikian, Cambrian and Devonian carbonates generated new interest in the northwestern part of the Mackenzie Mountains, where there had been little mineral exploration since the discovery and testing of the Snake River iron deposits in the early part of the 1960's. Lead-zinc-silver-barite and some large bedded barite deposits are reported in the district.

Concordant barite replacements vein Delorme Formation limestone, which is also locally replaced by lead-zinc-silver and lead-zinc veins and/or fracture fillings. Disseminated sphalerite is present in Camsell Formation and Cambrian Sekwi Formation. High grade lead-zinc veins have been found in

a number of mainly Paleozoic carbonates.

Important lead-zinc discoveries on the RT claims are in northwesterly striking Helikian carbonates and shales. Recent information suggests sphalerite is disseminated in primary solution collapse and crackle breccias on the flanks of large algal bioherms (reefs) in dolostone members of unit H5 (Aitken *et al.* 1973).

Access to most of the properties in this rugged, mountainous district is easiest by helicopter from Mayo, Y.T., 170 miles to the southwest, or Norman Wells, N.W.T., 120 miles to the east-northeast. A few lakes such as Palmer Lake on the south edge of the district and a small unnamed lake to the northwest, as well as gravel bars in some of the large rivers, are suitable for fixed wing landings. The main access to Rio Tinto's Gayna River Camp is by large wheel equipped aircraft capable of landing on a nearby gravel bar. A geological sketch, Figure 29, shows the claims in the Gayna River District as of January 1, 1977.

JAN GROUP
Welcome North Mines Ltd.
Suite 8
1161 Melville Street
Vancouver, B.C. V6E 2X7

Lead, Zinc
106 A/12
64°33'N, 129°58'W

REFERENCES

Blusson (1974).

PROPERTY

JAN 1-24

LOCATION

The JAN claims are in the Mackenzie Mountains approximately 110 miles southwest of Norman Wells (1 Fig. 29).

HISTORY

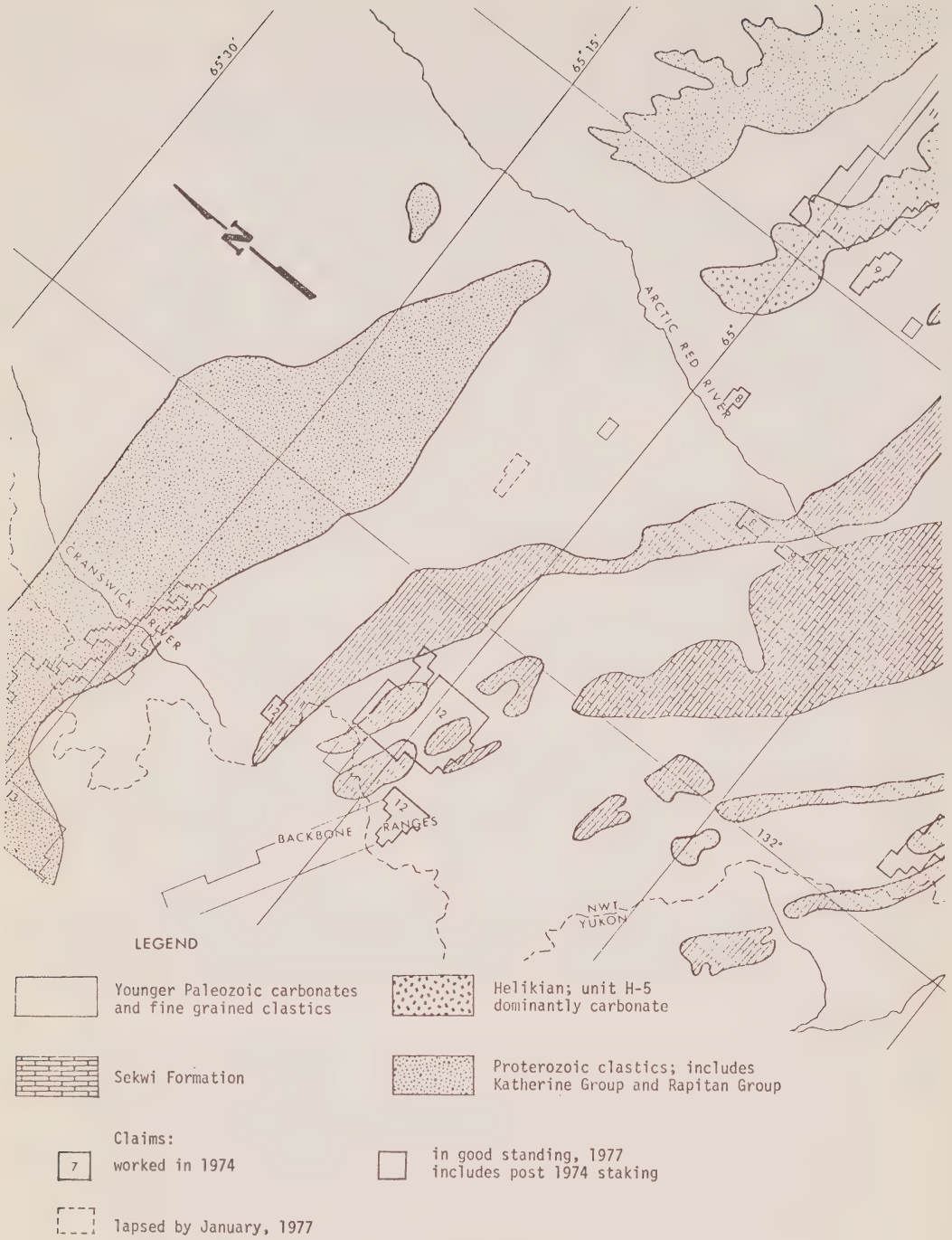
The JAN claim group was staked by Welcome North Mines Ltd. in September 1973 to cover lead-zinc in Devonian carbonates.

DESCRIPTION

The dominant structural feature on the JAN group is a westerly dipping regional thrust fault which separates Lower Cambrian to Ordovician Road River and Sekwi Formation shales and carbonates in the southwest from Devonian Landry and Hume Formations in the northeast: the footwall Devonian Formations have been contorted and mylonitized at the leading edge of the thrust and provide the host rock for mineralization. Two showings contain sphalerite and galena in vugs and fractures. They are separated, along strike, by 2000 feet of mineralized talus.

CURRENT WORK AND RESULTS

Preliminary geological mapping and prospecting in 1974 located material assaying 0.03% Pb and 0.20% Zn over 40 feet, and 0.22% Pb and 9.84% Zn over 18 feet.



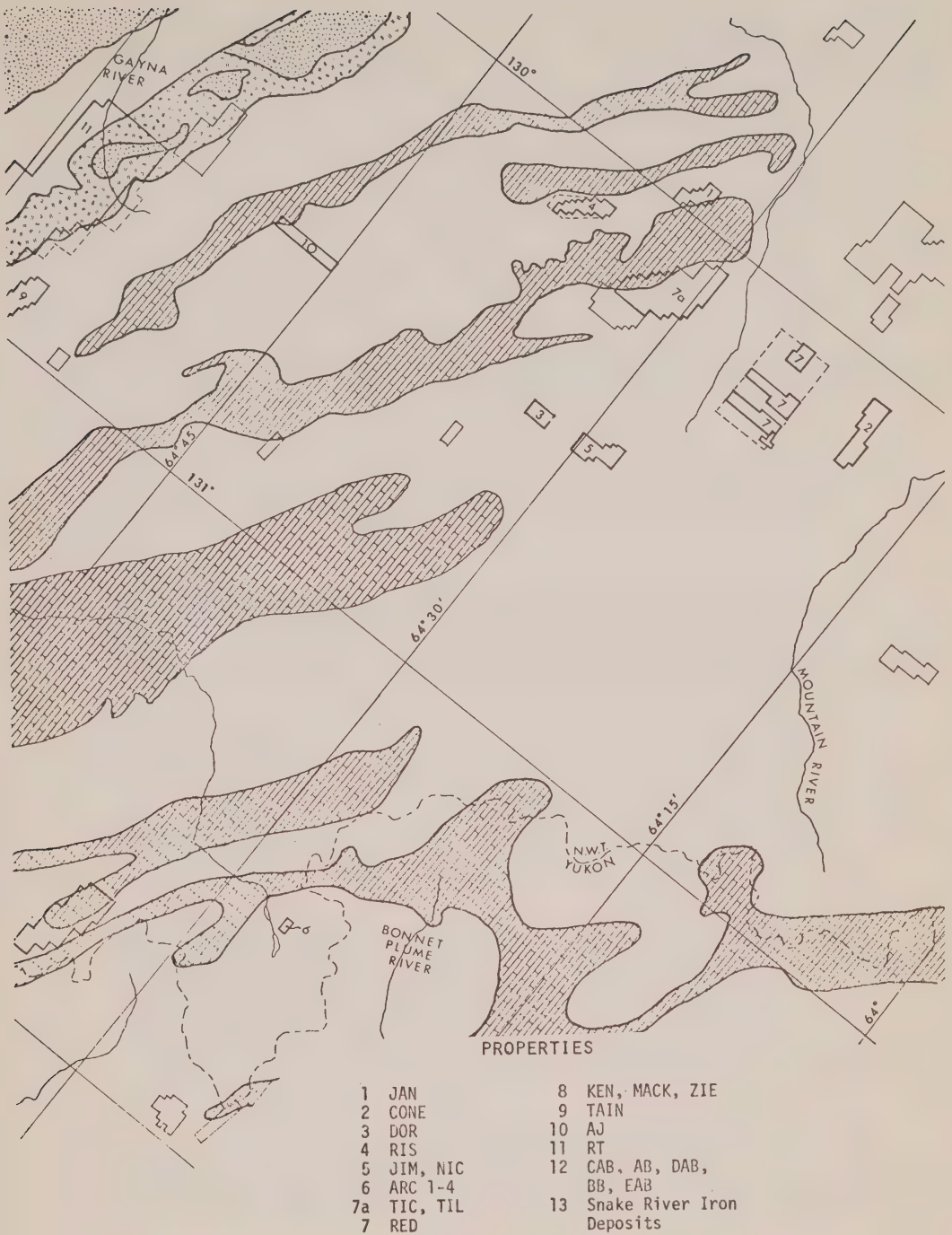


Figure 29. Geological sketch showing properties in the Gayna River District. Geology adapted mainly from Blusson (1974).

CONE GROUP
Noranda Exploration Company Ltd.
Box 45, Commerce Court West
Toronto, Ontario M5L 1B6

Lead, Zinc
106 B/8
64°19'N, 130°05'W

REFERENCES

Blusson (1974).

PROPERTY

CONE 1-62

LOCATION

The property is in the northern Mackenzie Mountains 55 miles east of Bonnet Plume Lake, and 105 miles west-southwest of Norman Wells (2 Fig. 29).

HISTORY

The CONE group was staked, mapped and prospected in August 1973 to protect several showings of lead-zinc, lead-zinc-silver-barite and barite found by regional exploration.

DESCRIPTION

The claims are underlain by relatively flat-lying Ordovician to Middle Devonian Whittaker Formation dolomite, and Delorme Formation limestone and dolomite, which are exposed in stream valleys, and Camsell Formation brecciated dolomite, Arnica and Sombre dolomite, and Landry Formation limestone, on higher ground.

Three types of mineralization are present on the CONE group: concordant replacement veins of barite and/or lead-zinc-silver, lead-zinc fracture fillings, and lead-zinc replacements in reefoid dolomite.

CURRENT WORK AND RESULTS

A detailed geological mapping and prospecting program was completed over the property during 1974.

The main showing, a vein 130 feet long and up to six feet wide, within the Delorme Formation limestone consists of honey-coloured sphalerite, finely disseminated galena, coarse white barite and minor amounts of tetrahedrite. A chip sample across this vein assayed 7.2 oz./ton Ag, 11.23% Pb, 29.63% Zn and 5.92% BaSO₄ across six feet. Two 440-foot long concordant barite layers in Camsell Formation limestone gave assays of 78.10% BaSO₄ over eight feet for the upper bed and 90.86% BaSO₄ over ten feet for the lower bed.

Small showings of galena and sphalerite are found in erratic fracture zones within limestone and dolomite of the Delorme and Arnica Formations. Very coarse galena and yellow-green sphalerite is associated with creamy dolomite and euhedral quartz in vugs of reefoid dolomites within the Camsell Formation.

DOR GROUP
Welcome North Mines Ltd.
Suite 8
1161 Melville Street
Vancouver, B.C.

Lead, Zinc
106 B/9
64°33'N, 130°29'W

REFERENCES

Blusson (1974).

PROPERTY

DOR 1-15

LOCATION

The DOR claims lie in the Mackenzie Mountains 70 miles northwest of Godlin Lakes (3 Fig. 29).

HISTORY

The DOR group was staked by Welcome North Mines Ltd. in 1973 on zinc mineralization discovered during regional prospecting.

DESCRIPTION

The DOR claims are underlain by northwesterly striking Ordovician-Devonian buff weathered, massive, limestone breccias, possibly of the Camsell Formation (Blusson 1974). Smithsonite and fine grained red to grey sphalerite disseminated along fractures and grain boundaries is the main mineralization in a slightly lenticular, 60 to 120-foot thick, light grey, reefoid, siliceous dolomite that is locally faulted and dips gently to the west.

CURRENT WORK AND RESULTS

Preliminary prospecting was completed during the 1974 field season. Random samples taken from talus slopes some 2000 feet below outcrops of the mineralized horizon assayed trace lead and from .19% Zn to 40% Zn.

RIS GROUP
Welcome North Mines Ltd.
Suite 8
1161 Melville Street
Vancouver, B.C.

Lead, Zinc
106 B/9
64°37'N, 130°05'W

REFERENCES

Blusson (1974).

PROPERTY

RIS 1-42

LOCATION

The RIS claims are in the Mackenzie Mountains 100 miles northwest of Norman Wells (4 Fig. 29). The abandoned Canol Road lies 60 miles south of the property.

HISTORY

The RIS claims were staked, prospected and mapped by Welcome North Mines Ltd. in 1973 to cover lead-zinc discovered by regional exploration.

DESCRIPTION

The claim group is underlain by carbonates of probable Ordovician to Devonian age which are part of the footwall of a regional, northwest trending low angle thrust fault. Hanging wall rocks, predominantly Cambrian quartzites, appear locally as erosional remnants.

Eight zinc-lead showings were found along a 2400-foot strike length of Ordovician-Devonian carbonates. Galena and sphalerite, as scattered blebs and massive layers as much as five feet thick, occur within a quartz gangue which is believed to be a hydrothermal filling of a fault zone.

CURRENT WORK AND RESULTS

Prospecting, geological mapping and sampling on the claims indicate the main showing consists primarily of mineralized white quartz and forms the western boundary of a 200-foot wide graben-like block. The orientation of the graben is discordant to the regional trend. Chip samples taken over the showing grade from trace to 54.8% combined lead-zinc over 5.5 feet and 4.2% combined lead-zinc over 24 feet. Of the 2400-foot strike length, only 935 feet are believed to have economic potential.

JIM AND NIC GROUPS
Welcome North Mines Ltd.
Suite 8
1161 Melville Street
Vancouver, B.C. V6E 2X7

Lead, Zinc
106 B/8, 9
64°30'N, 130°28'W

REFERENCES

Blusson (1974).

PROPERTY

JIM 1-16; NIC 1-20

LOCATION

The JIM and NIC claims (5 Fig. 29) are 105 miles westerly from Norman Wells.

HISTORY

The 36 JIM and NIC claims were staked by Welcome North Mines Ltd. in September 1973 to cover lead-zinc occurrences. Preliminary prospecting and geological mapping were also completed.

DESCRIPTION

The claim area lies within the Mackenzie Mountains, a northwesterly trending belt of Helikian to Mississippian carbonates and shales. The JIM and NIC properties are underlain by a sequence of undifferentiated carbonates of Ordovician-Devonian age. The host rock for mineralization is a

highly fractured grey dolomite thought to be equivalent to Arnica and Sombre Formations. Stratabound sphalerite and galena are found in zones adjacent to a system of northerly trending fractures, while the main showing on the JIM claims is cut by a prominent northerly trending fracture zone. On the NIC claims, three mineralized zones occur within carbonates over a 1500-foot stratigraphic interval. Mineralization, primarily red to yellow sphalerite and smithsonite, is present as vug and fracture fillings within breccia.

CURRENT WORK AND RESULTS

Preliminary geological mapping and rock sampling were completed. Chip samples from the JIM claims assayed from 3.16% combined lead-zinc over ten feet to 16.79% combined lead-zinc over 30 feet. On the NIC group samples ranged from trace to 1.19% Pb and from .11% to 6.07% Zn.

ARC, KEN, MACK, RED, TAIN, TIC, TIL, ZIE CLAIMS	Lead, Zinc
Serem Ltd.	106 B
770 2100 Drummond Street	64°30'N, 131°00'W
Montreal, Quebec	

REFERENCES

Aitken and Cook (1974); Blusson (1974).

PROPERTY

ARC 1-4	106 B/5
TIC 1-209; RED 1-286; TIL 107-167	106 B/8, 9
KEN 1-10; ZIE 1-29; MACK 1-20	106 B/14
TAIN 1-39	106 B/15

LOCATION

These claim groups are in the Mackenzie Mountains between Arctic Red River and Mountain River. They are shown on Figure 29 as properties 6, 7, 8 and 9.

HISTORY

The seven claim groups were staked in 1974 for Serem Ltd. to cover showings found by regional exploration.

DESCRIPTION

The 617 claims are underlain by carbonates and clastics. The main target is a porous reefoid dolomite in the Cambrian Sekwi Formation which is the host of lead-zinc mineralization comprising galena and sphalerite disseminations above paleo-highs and massive sphalerite fracture fillings.

CURRENT WORK AND RESULTS

Detailed results of the regional exploration that resulted in the claim staking, and the results of prospecting, sampling and geological mapping on the claim groups are not available.

AJ GROUP
Welcome North Mines Ltd.
Suite 8
1161 Melville Street
Vancouver, B.C. V6E 2X7

Lead, Zinc
106 B/15, 16
64°48'N, 130°35'W

REFERENCES

Aitken and Cook (1974); Blusson (1974).

PROPERTY

AJ 1-30

LOCATION

The AJ claims are 73 miles northwest of Godlin Lakes (10 Fig. 29).

HISTORY

The AJ group was staked for Welcome North Mines Ltd. in 1973 to cover lead-zinc mineralization discovered by regional prospecting.

DESCRIPTION

The AJ claims are in close proximity to the northwest trending Plateau Thrust which marks the eastern boundary of the Mackenzie Arch. Within the claim boundaries local faulting has locally thrust the Hadrynian Keele Formation and Rapitan Group over Middle Devonian Hume Formation.

A strike length of several miles of Middle Devonian Hume Formation carbonates contains coarse red sphalerite with minor galena in veins 10 to 20 feet wide in steeply dipping breccia zones and silicified carbonate breccias conformable with a dolomitized unit. Grades of the second type of occurrence are typically 1.5% to 2.5% Zn over 20 feet, while those of the first type may average 5% Zn over 15 feet.

CURRENT WORK AND RESULTS

Detailed prospecting and geological mapping were completed in 1974. Chip samples from the showing ranged from trace to 8.91% combined lead-zinc. A geochemical soil survey on the northwest end of the AJ claims found zinc anomalies coincident with known mineralization.

RT CLAIMS
Rio Tinto Canadian Exploration Ltd.
615 - 2 Bentall
Vancouver, B.C. V7X 1M8

Lead, Zinc
106 B/15, 16
64°47'N, 130°45'W

REFERENCES

Aitken and Cook (1974); Blusson (1974).

PROPERTY

RT 1-878

LOCATION

This property is near the headwaters of the Gayna River in the Mackenzie Mountains 120 miles west of Norman Wells (11 Fig. 29).

HISTORY

These claims were staked in 1974 by Cordilleran Engineering Ltd. for Rio Tinto Ltd.

DESCRIPTION

The claims are underlain by northwesterly striking Helikian to Ordovician clastics and carbonates of the Katherine Group, Franklin Mountain Formation and unnamed groups (H5 of Aitken and Cook 1974).

CURRENT WORK AND RESULTS

Preliminary prospecting and sampling were done during claim staking.

AB, BB, CAB, DAB, EAB GROUPS	Lead, Zinc
Welcome North Mines Ltd.	106 C/16
1161 Melville Street	106 F/1
Vancouver, B.C. V6E 2X7	64°59'N, 132°27'W

REFERENCES

Blusson (1974).

PROPERTY

61 CAB claims	106 C
191 AB; 20 DAB claims	106 C, F
BB 1-8; EAB 1-20	106 F

LOCATION

The CAB claims are adjacent to the Yukon border in the Backbone Ranges of the Mackenzie Mountains 130 miles west of Norman Wells (12 Fig. 29).

HISTORY

The CAB, AB, DAB and BB claims were staked by Welcome North Mines to cover lead-zinc mineralization found during regional exploration for the Arctic Red Joint Venture in 1974.

DESCRIPTION

Formations underlying the claims include dolomite, sandstone and shale of Cambrian Sekwi Formation (Blusson 1974) and Road River shales (Blusson 1974). In the western portion of the claim area the Ordovician to Silurian dolomites and limestones are missing from this sequence.

Mineralization occurs as fine-grained, honey-coloured sphalerite and minor galena within Sekwi dolomite. In places the mineralization is finely bedded and seems to be syngenetic, but elsewhere it is coarser grained and bedding features cannot be recognized. Lead-zinc mineralization on the BB group is in silicified breccia of the Franklin Mountain Formation.

CURRENT WORK AND RESULTS

The property was prospected, sampled and geologically mapped. Diamond drilling on the CAB claims was to continue on the AB group. A geochemical silt survey was done on the AB group.

Massive sphalerite in conformable layers up to three inches thick is separated by barren layers on the CAB group. A chip sample across the mineralized section assayed 4.8% Pb-Zn over 30 feet. A pyrite-rich bed, located 50 feet above the zinc mineralization, forms a gossan which can be traced intermittently across the property.

On the AB and DAB claims, massive sphalerite and galena occur in beds and along fracture zones in Sekwi dolomite. Silt in creeks adjacent to the main AB showings contains 50 to 80 ppm Pb and 300 to 600 ppm Zn. A chip sample across 100 feet of talus assayed 1.03% Pb and 8.64% Zn.

On the BB claims mineralization has been noted over widths in excess of 100 feet at sporadic intervals along a three-mile strike length. Selected high grade grab samples assayed as much as 0.19% Pb and 7.56% Zn.

PRODUCING MINES

During 1974 seven mines in the Northwest Territories reported production. Five of these mines produce mainly precious metals from epigenetic vein and shear-zone vein deposits in Precambrian volcanic rocks. The Giant and Con operations at Yellowknife, which produce mainly gold from quartz-carbonate ore bodies in extensive shear zones, are the most important and, over the long term, the most productive and profitable precious metal mines. Echo Bay and Terra Mines, in younger Bear Province rocks and the Hope Bay Mine in mafic volcanics in the northeastern corner of the Slave Province, have much smaller production. These are highly erratic vein deposits which typically contain short sections with bonanza type grades within much lower grade vein sections. Many vein systems on these silver properties and on others nearby may be essentially barren between widely spaced, high grade plums which make exploration and development both expensive and economically hazardous.

The Cantung tungsten mine, also epigenetic, is in much younger formations. The economic minerals, chalcopyrite and scheelite, have been introduced into Cambrian limestone by Cretaceous quartz monzonite intrusions.

Pine Point Mines Ltd. continued to be the main wealth producer in the Northwest Territories. Lead, zinc and cadmium shipped in concentrates in 1974 were valued at 174 million dollars, bringing production during the nearly 10-year life of this mine to more than 1.04 billion dollars. Practically all the mill feed came from open pit operations with only a few hundred tons a day being won from an experimental underground operation. All the ore bodies are in Paleozoic carbonates and all are clearly epigenetic.

HOPE BAY MINE
Hope Bay Mines Ltd.
Suite 1840
777 Hornby Street
Vancouver, B.C.

Silver
77 A/3
68°12'N, 106°32'W

REFERENCES

Fraser (1964); Padgham *et al.* (1976); Thorpe (1972).

PROPERTY

RUS 1-77, VAN 1-18

LOCATION

The property lies near Hope Bay on the Arctic Coast, 450 miles north-northeast of Yellowknife. Access is by aircraft or barge from Cambridge Bay on Victoria Island, 80 miles to the northeast. The Ida Point showing is on RUS 24 and 25 and the Roberts Lake silver showing on VAN 4.

HISTORY

The VAN and RUS claims were staked in 1965 and 1966 for Roberts Bay Mining Company to cover, respectively, the Roberts Lake and Ida Point silver showings. Exploration on the Roberts Lake showing in 1966 uncovered a 10-foot long western extension averaging 262 oz./ton Ag and an 8-foot long

eastern extension grading 749 oz./ton Ag and 992 oz./ton Ag over separate 1-foot widths.

In 1967 Hope Bay Syndicate acquired a 3-year option on the claims. For the next 3 years geological mapping, prospecting, diamond drilling, and geochemical and geophysical surveying explored the showings. Drilling on the Roberts Lake showing traced silver mineralization over a length of 50 feet, and indicated the silver content to decrease considerably with depth. The best mineralization is restricted to a section, 30 feet long and 2 1/2 feet wide, grading 140 oz./ton Ag. Drilling and trenching on the Ida Point showing traced silver mineralization for 80 feet. Going from east to west along the vein, samples assayed 298 oz./ton Ag across 0.7 feet, 2513 oz./ton across 3.2 feet, 154 to 300 oz./ton over 1 foot, and 9.7 oz./ton across 0.5 feet.

In 1972 Hope Bay Mining Company obtained a 49-year lease on the claims. Deeper trenching on both showings exposed native silver over greater widths.

In 1973 Hope Bay Mines Ltd. was incorporated. During the summer the company sunk a 300-foot decline and excavated drifts and raises on the Ida Point showing. Because of discouraging results exploration was shifted to the Roberts Lake showing where a 400-foot decline was sunk under the showing and 10 tons of hand-sorted ore assaying 4863 oz./ton Ag were shipped.

DESCRIPTION

The silver showings are located along the eastern edge of a north-south striking Archean meta-volcanic belt, near the contact with granitic rocks. Near the Ida Point showing the greenstone belt is cut by a multitude of granitic dikes.

Silver occurs in quartz pods or lenses and calcite-cemented breccia associated with closely-spaced, east-west striking fractures. Galena and sphalerite are commonly found with the silver in the calcite breccia and in the wall rocks surrounding the fractures.

CURRENT WORK AND RESULTS

On April 19, 1974 Hope Bay Mines Ltd. entered into an agreement with Van Silvers Explorations Ltd. and Reako Explorations Ltd. to jointly explore and develop the VAN claims. A crew of 20 moved in during June, rehabilitated the mine, built a 50-75 ton mill, and began mining the high-grade vein opened in 1973. During August and September the mill operated at 14 tons per day, producing 64,244 ounces of silver from 843 tons of ore, averaging 76 oz./ton Ag.

PINE POINT MINE PROPERTY
Pine Point Mines Ltd.
Pine Point, N.W.T.

Lead, Zinc
85 B/15, 16
60°50'N, 114°25'W

REFERENCES

Campbell (1957, 1966, 1967); Douglas and Norris (1974); Jackson and Beales (1967); Norris (1965); Schiller (1965); Schiller and Hornbrook (1964); Skall (1972, 1975); Thorpe (1966).

PROPERTY

4243 claims

LOCATION

The claims lie in an area over 33 miles long and several miles wide on the south shore of Great Slave Lake, 110 miles south of Yellowknife. Access is by 60 miles of highway from Hay River or by air to the Pine Point airstrip. A spur line of the Great Slave Railway provides concentrate and freight transport (Fig. 23, p. 173).

HISTORY

The showings were first discovered in 1898 and were explored intermittently until 1948 when Cominco Ltd. acquired an exploration concession covering approximately 500 square miles and in 1951 Pine Point Mines Ltd. was incorporated to finance continuing exploration. Diamond drilling and some underground work in 1955 indicated 5,000,000 tons of ore grading 4% Pb and 7% Zn. Open-pit development of the ore bodies began in 1964 and by November the first high-grade ore was shipped.

A 5000 ton/day concentrator was completed in 1965 and increased to 8000 ton/day when the X-15 and W-17 (formerly the Pyramid ore bodies) started producing in 1969. Underground operations began on the M-40 ore body in 1970. In 1972 Pine Point Mines Ltd. purchased 2 Coronet ore bodies, the R-61 and S-65, which contain one million tons of 10.4% combined Pb-Zn.

At the end of 1973 ore reserves of Pine Point Mines Ltd. were about 38.3 million tons averaging 2.3% Pb and 5.7% Zn.

DESCRIPTION

The country rocks comprise 1000 feet of gently dipping Middle Devonian limestone, dolomite and shale overlain by 400 to 550 feet of barrier reef sediments of the Pine Point Group which consists of fine, dense, sandy-textured dolomite, coarse crystalline Presqu'ile dolomite, and limestone.

About 40 lead-zinc bodies lie in Presqu'ile dolomite along two 065° striking zones known as the north hinge and main hinge. Presqu'ile dolomite comprises 15% vugs and open spaces which are locally lined or filled with bitumen, sulphur, galena, sphalerite and marcasite. Many of the ore bodies are irregularly tabular with horizontal dimensions of several hundred feet and thicknesses up to 100 feet. Some are smaller and have lesser horizontal and greater vertical dimensions. These are called prismatic ore bodies.

CURRENT WORK AND RESULTS

Tonnage milled was an all time high, but grade was lower than in 1973 resulting in nearly the same production of lead and zinc. High metal prices permitted processing of some lower grade material.

Nine open pits worked during the year produced 4.1 million tons grading 7.9% combined Pb-Zn. The pits worked, W-17, X-15, N-42, K-62, O-28, K-57, P-31, P-29 and N-38A are shown on Figure 30. Milling was at a rate of over 10,000 tons per day.

Underground mining started on the M-40 ore body and 40,000 tons were produced. Full production from this body will not be achieved until 1975

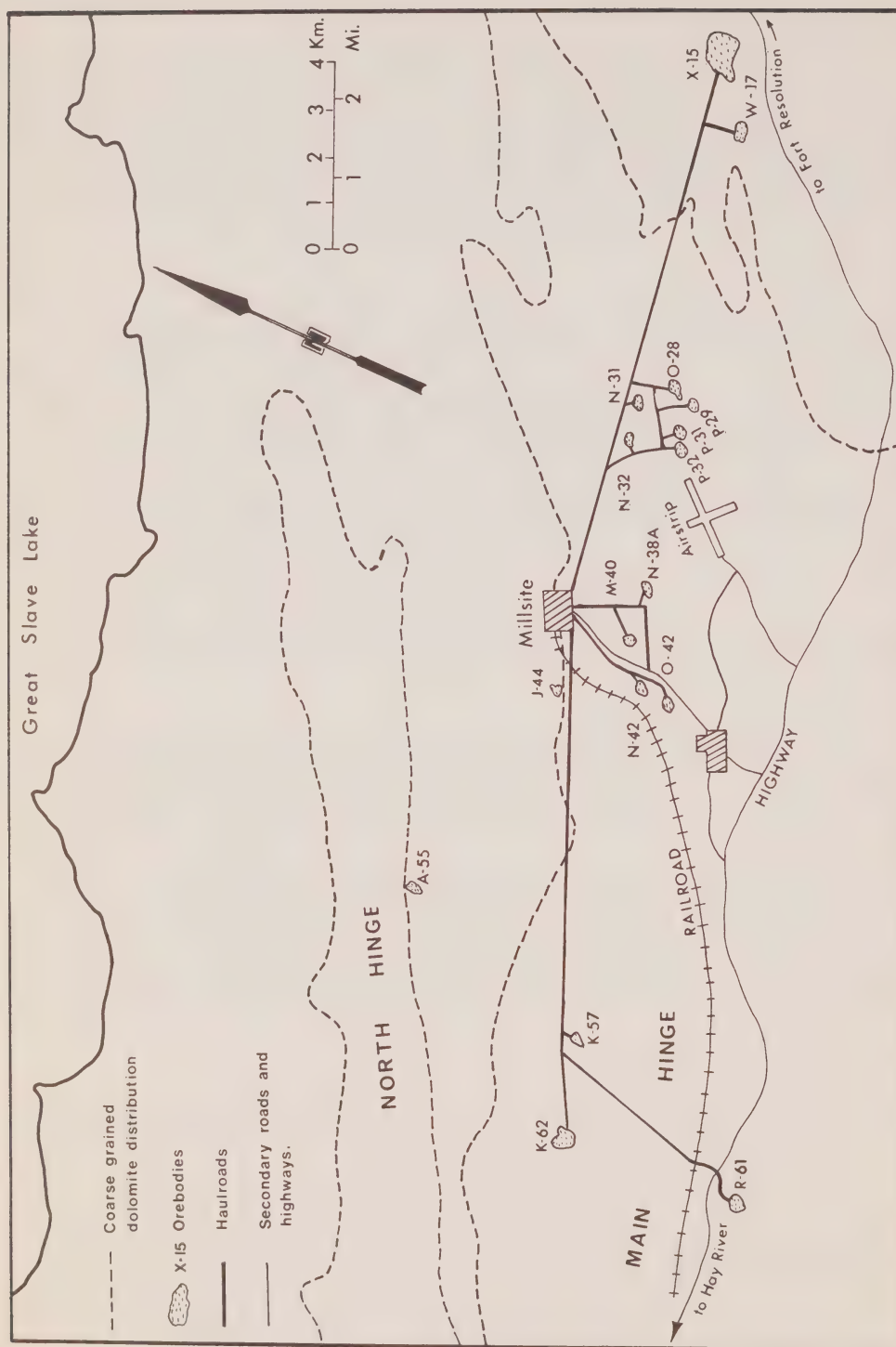


Figure 30. Plan of Pine Point Mines operations showing the various pits and ore bodies.

due to delays in equipment delivery.

Preparation of the former Coronet ore body, now called R-61, was begun in 1974 in preparation for 1975 production.

In November, 1974 Pine Point Mines Ltd. purchased the 408 ore body and 376 claims from Conwest Exploration Ltd. and Newconex Canadian Exploration Ltd. for 305 million dollars. The 408 ore body, now known as A-55, contains 1.4 million tons averaging 3.4% Pb and 9.6% Zn amenable to open pit mining to a depth of 350 feet. Exploration and ore outline drilling (32,000 feet) in the vicinity of producing pits added about as much ore as was milled.

PINE POINT MINES: PRODUCTION DATA

YEAR	TONS MILLED DAILY	TOTAL TONS MILLED	GRADE		PRODUCTION		AVERAGE PAYROLL
			%PB	%ZN	PB LBS.	ZN LBS.	
1971	10,635	3,881,927	2.47	5.89	191,697,080	457,202,720	504
1972	10,395	3,804,729	2.50	5.76	190,549,380	438,646,860	524
1973	10,674	3,896,357	2.71	5.56	211,395,640	433,179,000	550
1974	11,513	4,135,380	2.50	5.30	201,766,140	410,968,220	587

CON MINE: CON-RYCON PROPERTY
Cominco Ltd.
Yellowknife, N.W.T.

Gold, Silver
85 J/8
62°27'N, 114°22'W

REFERENCES

Baragar (1962); Baragar and Hornbrook (1963); Boyle (1961); Campbell (1947, 1949); Henderson and Brown (1966); Lauer (1957); Lord (1951); McGlynn (1971); Padgham, Kennedy *et al.* (1975); Sproule (1952); Thorpe (1966, 1972).

PROPERTY

CON 1-14, P & G 1-4

LOCATION

The Con-Rycon property is one half mile south of Yellowknife, on the west side of Yellowknife Bay.

HISTORY

The CON claims were staked in 1935 for Cominco Ltd. and the Con shaft was collared in 1937. A 100-ton per day mill was put into operation in 1938 and its capacity was increased to 350 tons per day in 1942.

The P & G claims were staked in 1936 and Rycon Mines Ltd. was incorporated to explore and develop them. The Rycon shaft was started in 1938 and crosscuts on the 500- and 950-foot levels were extended easterly from the Con shaft to connect with the Rycon workings. In 1939 the first Rycon ore was received at the Con mill.

The Campbell system of ore-bearing shear zones, discovered in 1944, was intersected by a crosscut from Con Mine's 2300-foot level in 1948 and production began in 1956. Following the increase in the price of gold, and extensive exploration to increase ore reserves, the Robertson Shaft was started in 1973.

Between 1938 and 1973 2,538,849 ounces of gold were produced from 4,339,224 tons of ore.

DESCRIPTION

The country rocks are mainly Archean Kam Formation basalts. A swarm of westerly dipping gabbroic dikes cut the volcanics and are in turn cut by mineralized shear zones. Two major shear zones, the Con and the Campbell, have been exploited in the Con Mine.

The Con shear zone, which has an average strike of 020° and an average dip of 60°W, averages 50 feet in width, but is several hundred feet wide in the productive section. It consists of interlacing schist zones and un-sheared horses of country rock. Ore bodies occur at the noses of the un-sheared horses or at flexures as quartz lenses, pods, and replacements bodies mineralized with pyrite, arsenopyrite, stibnite, chalcopyrite, sphalerite, sulphosalts, galena, and gold.

The Campbell shear zone strikes 020° and dips 50°W, and lies about 3000 feet east of the Con system. It is considered by some to be the faulted extension of the Giant shear zone. It ranges from a few hundred feet to more than a thousand feet in width and is made up of several interlacing chlorite-sericite schist zones and horses of unsheared country rock. The schist zones are locally carbonatized, sericitized, silicified, and mineralized with pyrite, arsenopyrite, sulphosalts, and gold. All production at present is from the Campbell shear zone.

CURRENT WORK AND RESULTS

Con Mine has increased its reserves and is actively expanding its operations. The new Robertson shaft reached the 2900-foot level by the end of 1974. Sinking will continue until at least the 5300-foot level.

CON MINE: PRODUCTION AND DEVELOPMENT DATA

YEAR	DEVELOPMENT*			DRILLING*	AVERAGE PAYROLL	TONS MILLED		GRADE AU OZ/TON	PRODUCTION AU OZ.
	DRIFTS	RAISES	SINKING			DAILY	TOTAL		
1971	6,382	2,017	-	58,836	226	434	158,480	0.58	91,281
1972	4,958	3,017	-	45,512	210	450	164,776	0.64	106,060
1973	5,255	2,635	-	63,834	207	462	168,696	0.54	90,896
1974	5,180	1,629	2,461	39,851	219	398	145,205	0.58	83,565

* Development and Drilling in feet.

GIANT MINE
Giant Yellowknife Mines Ltd.
Yellowknife, N.W.T.

Gold, Silver
85 J/8, 9
62°30'N, 114°22'W

REFERENCES

Baragar (1961, 1962); Boyle (1961); Brown, Dadson and Wigglesworth (1959); Henderson and Brown (1966); Lord (1951); McGlynn (1971); Padgham, Kennedy *et al.* (1975); Thorpe (1966).

PROPERTY

AES 27-50, GIANT 1-21, LOLOR 1-7

LOCATION

Giant Mine is 2 1/4 miles north of the centre of Yellowknife, on the west side of Yellowknife Bay.

HISTORY

The lower part of the Yellowknife River basin was explored in 1933 and staked as the GIANT claims in 1935. In 1937 Giant Yellowknife Mines Ltd. was incorporated to acquire and develop the property, and in 1944 drilling in the Baker Creek Valley intersected mineralized shear zones and veins. A 500 ton per day mill was put into operation in 1948 and was gradually increased to 1000 tons per day by 1960.

The LOLOR claims were staked in 1936. During the 1950's the 750-foot level of Giant Mine was extended into these claims and production commenced in October, 1967.

In 1964 a drift was started from the 750-foot level of Giant Mine to the Akaitcho ore zone (Supercrest property) and production began in October, 1967.

Between 1948 and 1973 the GIANT-LOLOR-SUPERCREST properties produced 8,121,193 tons of ore which yielded 4,819,996 ounces of gold and 769,250 ounces of silver.

DESCRIPTION

The country rocks are northeast-striking, steeply west-dipping, overturned Archean meta-andesites and meta-basalts of the Kam Formation, intruded by gabbro dikes. Shear zones, containing the Giant ore bodies, cut both the volcanics and associated gabbros, and are in turn cut by diabase dikes and late faults. The shear zones are subparallel, interlacing chlorite schist zones surrounding horses of unsheared greenstone. Irregular and lenticular ore bodies ranging from 3.5 to 50 feet in width are composed of fine-grained quartz and sericite schist with about 7% metallic minerals, mainly pyrite, arsenopyrite, stibnite, sphalerite, sulphantimonides, and visible gold.

CURRENT WORK AND RESULTS

During the year Giant Mine produced 254,918 tons of ore grading 0.32 oz./ton Au, Lolor Mine produced 25,460 tons of ore grading 0.286 oz./ton Au, and Supercrest Mine produced 47,721 tons grading 0.578 oz./ton Au.

Tonnage and grade were well below 1973 levels, but Giant is expanding its operations and has increased its reserves. An open pit was developed near the south end of the property in a zone reported to have 1/2 million tons of ore grading 0.3 oz./ton Au to a depth of 350 feet. It produced about 400 tons per day and a total of 26,886 tons during the year.

Approximately 400,000 tons of ore were found by diamond drilling, principally in the B shaft area below the 750-foot level.

Ore reserves at year-end were estimated at 2,400,000 tons grading 0.33 oz./ton Au.

GIANT MINE: PRODUCTION AND DEVELOPMENT DATA

YEAR	DEVELOPMENT*		DRILLING*		AVERAGE PAYROLL	TONS MILLED		GRADE AU OZ/TON	PRODUCTION AU OZ.
	DRIFTS	RAISES	U/G	SURFACE		DAILY	TOTAL		
1971	5,646	5,402	136,565	10,872	388	1,106	403,819	0.54	217,701
1972	5,225	5,964	230,383	11,970	381	1,097	401,522	0.50	201,185
1973	5,398	6,285	233,229	24,544	358	1,067	389,460	0.46	158,293
1974	6,353	4,739	224,504	14,780	326	899	328,099	0.36	101,514

* Development and Drilling in feet.

ECHO BAY MINE
Echo Bay Mines Ltd.
408, 10355 Jasper Avenue
Edmonton, Alberta

Silver, Copper
86 K/4, L/1
66°06'N, 118°00'W

REFERENCES

Mursky (1973); Padgham, Kennedy *et al.* (1975); Robinson (1971); Robinson and Ohmoto (1973); Schiller (1965); Schiller and Hornbrook (1964); Thorpe (1966, 1972).

PROPERTY

ECHO BAY 1-10

LOCATION

Echo Bay Mine is one mile northeast of Port Radium, on Great Bear Lake. Access is by aircraft to ice or gravel airstrips, by Northern Transportation Company barges, or by winter road from the Yellowknife highway near Rae, 250 miles to the south.

HISTORY

The claims were staked in 1930 for Cominco Ltd. and 2 adits were driven on the western part of the property in 1934. Echo Bay Mines Ltd. acquired the property in 1964 and production commenced from the 2 adit levels in October of that year. In 1968 an internal shaft was sunk from a third adit opened in 1967. The shaft, which initially had 2 levels, was deepened to 1250 feet providing 8 levels in 1970. The claims are now covered by mining leases 321-325, 327 and 331.

From 1970 to 1972 the mill operated at a rate of 101 tons per day with mill heads averaging 70 oz./ton Ag and 0.95% Cu. Approximately 22,000,000 ounces of silver and 9,000,000 pounds of copper were produced from 332,000 tons of ore mined between 1964 and the end of 1973.

DESCRIPTION

The country rocks are northeast-striking, Aphebian tuffs, andesites, and agglomerates of the Echo Bay Group. Within the mine these volcanics dip 35° to 40° southeast and are cut by a 150-foot thick diabase sheet and two 100-foot thick diabase dikes of Helikian age.

The Echo Bay veins are quartz-carbonate filled fractures and shears found mostly within the Cliff series tuffs of the Lower Echo Bay subgroup. Within the mine they are offset approximately 300 feet by the northeast-striking A fault. Three types of mineralized veins have been found: low-grade veins of fine-grained argentite typically with coarse-grained galena, sphalerite, niccolite and pitchblende; irregular hematitized quartz-carbonate veins containing native silver, argentite, some massive native silver, with small high-grade offshoots of disseminated arsenides and chalcopryrite; and a narrow quartz-carbonate vein developed along the A fault with alteration zones up to 8 feet wide and containing argentite, minor native silver, considerable ruby silver, and an unusually high copper content in bornite.

CURRENT WORK AND RESULTS

During the first 10 months of the year an average of 90 tons per day grading more than 100 ounces of silver per ton were mined. Mining of the lower levels then ceased and for the last 2 months of the year ore was mined from above the main haulage level.

The hoist was moved to the Eldorado Mine on the COBALT claims which is presently being dewatered to the 850-foot level, in preparation for exploratory drilling. The company hopes to recover several high grade pockets of silver ore left when this mine closed in 1961.

ECHO BAY MINE: PRODUCTION DATA

YEAR	TONS MILLED DAILY	TOTAL TONS MILLED	GRADE		PRODUCTION		AVERAGE PAYROLL
			AG	CU%	AG OZ	CU LBS	
1971	99	35,985	68	0.92	2,445,709	663,176	136
1972	101	37,291	65	1.05	2,456,386	785,682	128
1973	98	37,393	82	1.15	3,063,820	859,241	91
1974	90	20,768	104	0.99	2,159,137	408,997	73

TERRA MINE
Terra Mining and Exploration Co. Ltd.
204, 8631 - 109 Street
Edmonton, Alberta

Silver, Copper, Bismuth
86 E/9
65°36'N, 118°07'W

REFERENCES

Hoffman *et al.* (1976); Kidd (1936); Murphy and Shegelski (1972); Padgham, Kennedy *et al.* (1975); Shegelski (1973); Shegelski and Thorpe (1972); Thorpe (1972, 1972a).

PROPERTY

A 1-24

LOCATION

The mine is on the Camsell River, approximately 4 miles from its mouth and about 250 miles northwesterly of Yellowknife. Concentrates are trucked over a winter road to the Yellowknife highway at Rae or shipped by barge on the Great Bear Lake - Mackenzie River system. Airstrips at the mine and at the Norex Mine, 8 miles away by an all-weather road, accommodate DC-3 aircraft which are used to ship high grade ore, move personnel, and bring in supplies. Figure 9 (page 93) shows the Terra Mine property.

HISTORY

The property, first staked as the YAW group, was restaked in 1966 as the A group and was taken over by Silver Bear Mines Ltd., a wholly owned subsidiary of Terra Mining and Exploration Co. Ltd.

In 1967 31 drill holes totaling 9306 feet intersected zones of Ag-Cu-Bi-Co mineralization. A decline was driven 1200 feet to reach the main zone and 600 feet of drifting and 393 feet of raising were completed. By 1969 7000 to 9000 tons of rock grading about 6 oz./ton Ag and 1.2% Cu had been stockpiled, and a 300 ton mill, equipped to separate Ag-Bi and Cu-Ag concentrates, had been constructed. Milling, at a rate of 150 tons per day, started in October, 1969. The claims are now covered by mineral leases lot 43, 45 and 46 Group 1162.

In 1970, underground drilling outlined Ag-Bi rich veins with a vertical extent of 600 feet. Cross vein #9 assayed 152 oz./ton Ag uncut over 3.2 feet for a length of 120 feet. Surface drilling in 1972 intersected bismuth-bearing calcite veins and in 1973 a drift was extended from the first level of the mine to test these veins. A 700-foot long section of the #11 vein averaged 61.4 oz./ton Ag and the #10 vein averaged 30 oz./ton Ag across 24 feet.

From October, 1969 to the end of 1973 about 3.6 million ounces of silver and 600,000 pounds of copper were produced. At the end of 1973 reserves were about 80,700 tons, including 49,500 tons grading 43.9 oz./ton Ag and 31,200 tons grading 2.8 oz./ton Ag and 3.28% Cu.

DESCRIPTION

The country rocks are Aphebian volcanics, volcanoclastics, chert, argillite, sandstone and conglomerate of the Echo Bay Group. The volcanics and volcanoclastics enclose a 100-foot wide, northwest trending zone containing greater than 10% sulphides, mainly pyrite, pyrrhotite, and chalcopyrite with a mixture of argentite, cobalt and bismuth arsenides, native silver, and native bismuth. The silver-bismuth-cobalt mineralization is concentrated in quartz-carbonate-hematite veins, along fractures perpendicular to the zone and is considered younger than the northwest trending copper mineralization (Shegelski 1973). Other minerals identified in the ore are skutterudite, safflorite, rammelsbergite, pararammelsbergite, matildite, and sphalerite.

CURRENT WORK AND RESULTS

Most of the production during the year came from the #10 vein. Tonnage milled exceeded that of 1973 but silver production and grade were down. The

grade improved as the richer ore from the #10 vein was milled. Ore from the #11 vein was being milled in 1974 at a rate of 125 tons per day.

Exploration indicates the #10 vein will be productive from the sixth level to the surface. The vein has discontinuous, but in locally high grade, ore shoots. High grade silver ore was encountered in the #11 vein on the fifth level. These veins gave the mine more or less proved ore reserves for the first time since start-up in October, 1969. At year-end reserves were estimated at 69,000 tons including 42,400 tons grading 55.1 oz./ton Ag and 26,600 tons grading 2.6 oz./ton Ag and 3.1% Cu.

TERRA MINE: PRODUCTION AND DEVELOPMENT DATA

YEAR	DEVELOPMENT*		DRILLING *		AVERAGE PAYROLL	TONS MILLED		GRADE		PRODUCTION	
	DRIFFTS	RAISES	UNDERGROUND	SURFACE		DAILY	TOTAL	AG OZ/TON	CU%	AG OZ.	CU LBS.
1971	2,973	1,331	4,816	1,364	69	134	48,714	41.4	0.80	1,193,396	783,208
1972	1,691	1,123	1,772	1,688	40	68	24,722	78.0	0.38	1,917,922	189,267
1973	3,749	3,564	7,994	-	53	113	38,787	35.9	0.65	1,394,180	500,444
1974	6,021	2,145	11,774	-	53	137	45,684	23.6	0.51	1,093,919	475,549

* Development and Drilling in feet.

CANTUNG MINE
Canada Tungsten Mining Corp. Ltd.
Mine Office
Tungsten, N.W.T.

Tungsten, Copper
105 H/16
61°57'N, 128°15'W

REFERENCES

Blusson (1968); Brown (1961); Craig and Laporte (1972); Findlay (1967, 1969); Gabrielse *et al.* (1973); Green (1965, 1966); Green and Godwin (1963); Padgham, Kennedy *et al.* (1975); Padgham *et al.* (1976); Skinner (1961, 1962).

PROPERTY

P 1-36; R 1-36; L 1-36; V 1-36; B 1-36; PK 1-30; O 1-36; CED 1-49, 59-65, 67-73; WO 1-11; BC 1-8, 10-11; AC 1-7; RL 1, 3-5, 8-10, 19-20; EF 2, 5-8

LOCATION

Cantung Mine is situated in the Selwyn Mountains, near the headwaters of the Flat River, 130 miles north of Watson Lake and a few miles east of the Yukon border (Fig. 31). Access is by a 195-mile gravel road from Watson Lake, or via a short gravel airstrip at the mine site.

HISTORY

The area was staked in 1954, but lapsed and was restaked in 1958. In 1959 Canada Tungsten Ltd. was formed to develop the property. By 1960 extensive surface work and diamond drilling had indicated 1,176,400 tons of ore grading 2.47% WO₃ and 0.5% Cu. Open pit mining began in 1961 and milling started in 1962. From September, 1963 to May, 1964 mining and milling were suspended due to low tungsten prices. Milling was suspended again in 1967 when a fire destroyed the mill.

Diamond drilling in 1970 outlined tungsten reserves in a low grade cherty zone under and northeast of the open pit.

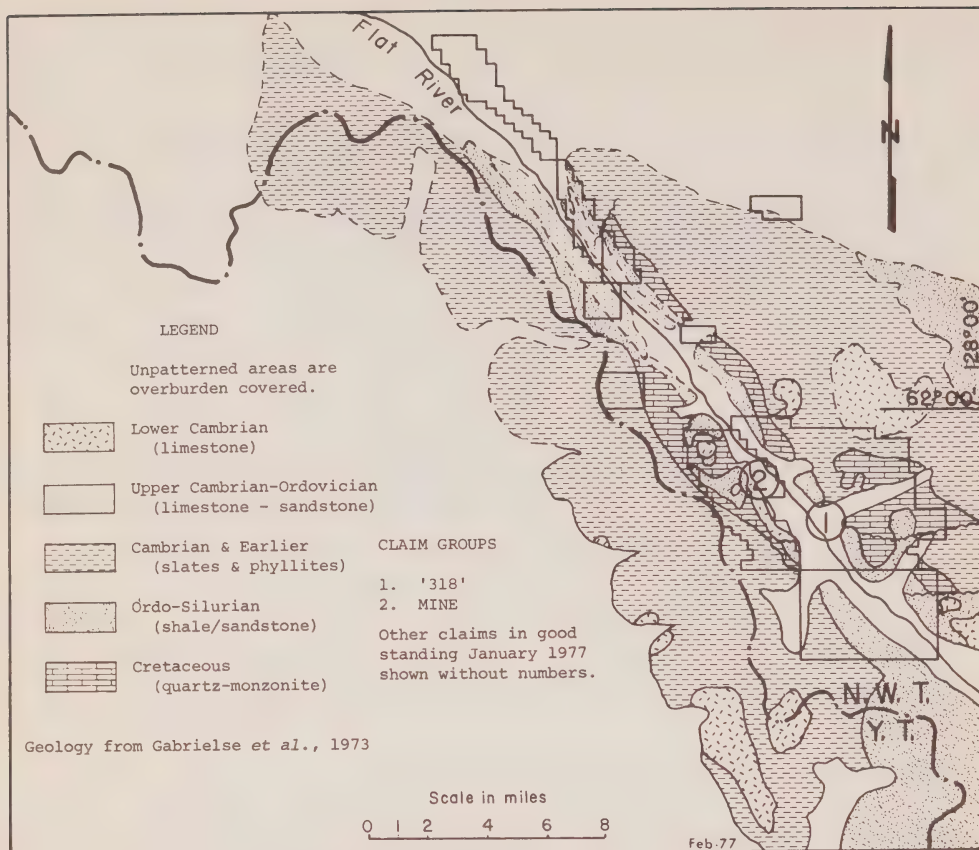


Figure 31. Geological map of the Tungsten-Flat River area, N.W.T. showing claims worked in 1977.

In 1971 drilling intersected the E skarn zone at the north end of the pit. By 1973 drilling indicated this zone to have reserves of 4,242,000 tons grading 1.68% WO_3 and 0.22% Cu.

DESCRIPTION

The claims are underlain by a northwest trending, overturned syncline of Lower Paleozoic argillite, limestone, dolomite, and chert, intruded by Cretaceous quartz monzonite. Within the lower limb of the syncline the quartz monzonite has altered Lower Cambrian limestone to a diopside-garnet-epidote skarn which hosts the open pit ore body. The ore body is a shallow, southwest dipping lens about 300 feet wide and up to 65 feet thick comprising fine disseminated scheelite in a massive to heavily-disseminated pyrrhotite-chalcopryrite-scheelite matrix crosscut by coarse-grained quartz-calcite-scheelite veins and lenses.

Outside the skarn lies banded chert mineralized with scheelite-bearing pyrrhotite. It forms extensive low grade tungsten reserves.

The main ore body at present, is the gently east-plunging E zone, located 1800 feet northeast and 2100 feet below the open pit deposit.

CURRENT WORK AND RESULTS

Canada Tungsten Mining Corp. Ltd. switched from open pit to underground mining during the year. The underground development of the E zone was contracted to Canadian Mining Services and the first ore from the zone was supplied to the concentrator at the end of the year. Because of a chronic labour shortage the company's planned townsite, plant and mill improvement and expansion was behind schedule by year end.

Copper production was low during May and June, and all production stopped during November due to a strike.

Ore reserves at year end were 4,436,424 tons grading 1.63% WO₃ and 0.23% Cu.

CANTUNG MINE: PRODUCTION DATA

YEAR	TONS MILLED DAILY	TOTAL TONS MILLED	GRADE		PRODUCTION		AVERAGE PAYROLL
			CU%	WO ₃ %	CU LBS.	WO ₃ LBS.	
1971	490	181,596	0.15	1.19	241,797	3,288,400	83
1972	466	172,828	0.14	1.15	214,851	3,174,120	84
1973	452	164,900	0.16	1.22	197,861	3,927,000	85
1974	467	170,614	0.16	1.46	163,665	3,557,600	104

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NATIONAL TOPOGRAPHIC SYSTEM INDEX OF COMPANIES

- 25 K/13 Kimik Co-op,29
- 39 G,H Kapvik Exploration,62
- 49 A-H Kapvik Exploration,62
- 48 A/13 Global Arctic Islands Limited,37
- 48 C/1 Nanisivik Mines Limited,30
- 55 D/13 Aquitane Company of Canada Limited,7
- 55 E Aquitane Company of Canada Limited,7;
Noranda Exploration Company Limited,11
- 55 F/11 Aquitane Company of Canada Limited,7
/12/13/14
- 55 K Noranda Exploration Company Limited,11
- 55 K/4 Aquitane Company of Canada Limited,7
- 55 K/5 Selco Mining Corporation Limited,14
- 55 K/7 Sik Sik Golden Copper Mines Limited,
11
- 55 L/8 D.Meunier and R.P.Mullette,17; Teck
Mining Group Limited,17; Selco Mining Corp-
oration Limited,14
- 55 M Pan Ocean Oil,21
- 56 J Cominco Limited,26
- 56 K Cominco Limited,26
- 58 B/14 Cominco Limited,69
/15
- 58 C/3 Cominco Limited,69; Diapros Canada
Limited,65
- 58 C/8 Diapros Canada Limited,65
- 58 C/9 Diapros Canada Limited,65
- 58 C/11 Cominco Limited,41
- 58 D/5 Diapros Canada Limited,65
- 58 D/11 Diapros Canada Limited,65
/12
- 58 F/1 Cominco Limited,48
- 58 F/12 Cominco Limited,42
- 58 F/14 Arvik Mines Limited,43; Canadian
Superior,49; Cominco Limited,46
- 58 G Canadian Superior,49
- 58 G/5 Arvik Mines Limited,47
- 58 G/11 Arvik Mines Limited,48
- 59 B/3-7 Cominco Limited,50-53
- 59 B/11 Cominco Limited,52-53
/12/13
- 65 C/13 Phelps Dodge Corporation of Canada
Limited,17
- 65 D/6 Phelps Dodge Corporation of Canada
Limited,72
- 65 G/1 O'Brien Gold Mines Limited,18
- 65 G/7 O'Brien Gold Mines Limited,18
- 65 G/8 O'Brien Gold Mines Limited,18
- 65 H Noranda Exploration Company of Canada
Limited,11
- 65 H/1 Aquitane Company of Canada Limited,7
- 65 O Shell Canada Limited,23
- 65 P Pan Ocean Oil,26
- 66 A Metallgesellschaft Canada Limited,24
- 66 B Metallgesellschaft Canada Limited,24
- 66 G Metallgesellschaft Canada Limited,24
- 66 M/9 Cominco Limited,72
- 66 N/5 Canadian Southern Petroleum Limited,30;
Nemco Exploration Limited,30; Perry River
Nickel Mines,31; Rio Alto Exploration Limited,
31; Savanna Creek Gas and Oil,31
- 68 H/1 Canadian Superior,49
- 68 H/7 Cominco Limited,54
- 68 H/8/9 Arvik Mines Limited,55
- 68 H/9 Cominco Limited,58
- 68 H/11 Cominco Limited,58
/14
- 69 A Cominco Limited,58,59
- 75 C/13 Enex Resources Limited,74
- 75 E/8 Shell Canada Limited,75
- 75 F/13 Imperial Oil Limited,76
- 75 K/11 W.Brinsa,79
- 75 L/4 Delta North Exploration and Mining
Limited,80; Rayrock Mines Limited,80
- 75 L/12 Great Plains Development Company of
Canada Limited,82
- 75 M/2 Initiative Exploration Limited,137
- 75 M/12 Cleaver Lake Mines Limited,138
- 76 B/4 Great Plains Development of Canada
Limited,139; Noranda Exploration Company
Limited,140
- 76 C/9 Great Plains Development Company of
Canada Limited,141
- 76 D/6 Perry River Nickel Mines Limited,105
- 76 E/11 Canadian Superior Exploration Limited,
107; Ram Petroleums Limited,106
- 76 F/8 Noranda Exploration Company,158,156;
Teck Corporation Limited,154
- 76 F/9 Brascan Resources Limited,159;Cominco
Limited,158; Noranda Exploration Company,157-8
- 76 F/15 Bathurst Norsemes Limited,16;Cominco
Limited,16
- 76 F/16 Brascan Resources Limited,159;Cominco
(Bathurst Norsemes Limited)161; Cominco,162;
Mid North Explorations, 162

- 76 G/2 DuPont of Canada Exploration Limited,
165; Noranda Exploration Company Limited,164
- 76 G/3 DuPont of Canada Exploration Limited,
165
- 76 G/4 Teck Corporation,154
- 76 G/5 Cominco Limited,167; Noranda Explora-
tion, 166; Teck Corporation,154
- 76 G/6 Noranda Exploration Company Limited,
167
- 76 G/12 Brascan Resources Limited,159; Cominco
Limited,158,167; Great Plains Development
Company of Canada,168; Noranda Exploration
Company,157,169,170
- 76 G/13 Cominco Limited (Bathurst Norsemes
Limited),161
- 76 L/4 Long Lac Mineral Exploration Limited,
130
- 76 L/10 Long Lac Mineral Exploration Limited,
133
- 76 M/2 Great Plains Development Company of
Canada Limited,134
- 76 M/3 Texasgulf Incorporated,135
- 77 A/3 Hope Bay Mines Limited,227
- 85 A/13 Pine Point Mines Limited,171
- 85 B/10 Pine Point Mines Limited,171,174,228
/11/16
- 85 E/9 Terra Mining and Exploration Corpora-
tion Limited,235
- 85 H/9 G.Michalow, C.Weyrowitz,77
- 85 H/10 Nor Can Minerals Limited,77
- 85 I/7 Delphi Resources Limited,109; Duke
Mining Limited,108; I.B.C.Scott,110
- 85 I/10 Delphi Resources Limited,109;
Worldwide Truck and Equipment Limited,142
- 85 I/11 D.M.Collier, C.McCarthy, J.S.Turner,110
- 85 I/12 C.Vaydick,109
- 85 I/14 Discovery Mines Limited,114; Duke
Mining Limited,110,113,114,115; R.B.Fells,110;
Nemco Exploration,113,116; Nor Can Minerals
Limited,110
- 85 I/15 D.Nickerson,144; Worldwide Truck and
Equipment Limited,142
- 85 J/8 W.E.Bellis,118;Cominco Limited,231;
Giant Yellowknife Mines Limited,233; C.Sanders
118
- 85 J/9 Giant Yellowknife Mines Limited,233
- 85 N/1 Crestland Mines Limited,84
- 85 N/8 Anglo-United Development Corporation
Limited,120
- 85 N/10 Uranerz Exploration and Mining Limited,
85
- 85 N/15 Noranda Exploration Company Limited,86
- 85 O/1 Nemco Explorations,121;L.Rocher,110
- 85 O/3 J.Doucette,146;Seaforth Mines Limited,
122
- 85 O/4 Giant Yellowknife Mines Limited,123
- 85 P/1 Terra Mining and Exploration Limited,
124
- 85 P/3 F.Furlong,110; W.J.Humphries,125
- 85 P/4 Precambrian Mining Services Limited,110
- 85 P/6 Prosper Mines Limited,126
- 85 P/7 Great Plains Development Company of
Canada Limited,145; Noranda Exploration
Company Limited,145
- 86 B/6 F.Lafferty,128
- 86 C/7 Uranerz Exploration and Mining Limited
87
- 86 C/15 Imperial Oil Limited,88
- 86 D/9 Nemco Exploration Limited,89
- 86 E/9 Terra Mining and Exploration Limited,94
- 86 F/12 F.Lypka,97; Seaforth Mines Limited,95;
Terra Mining and Exploration Limited,96
- 86 F/15 Rio Tinto Canadian Exploration Limited,
90
- 86 F/16 Rio Tinto Canadian Exploration Limited,
99; Seaforth Mines Limited,89
- 86 H/2 Precambrian Shield Resources Limited,
129
- 86 H/15 Texasgulf Incorporated,147
- 86 I/2 Texasgulf Incorporated,148
- 86 K/4 Echo Bay Mines Limited,234
- 86 K/11 Cleaver Lake Mines Limited,91
- 86 L/1 Echo Bay Mines Limited,234
- 86 N/2/3 B.P. Minerals Limited,99
/4
- 86 N/6 Imperial Oil Limited,100
- 86 N/7 B.P. Minerals Limited,101;Imperial Oil
Limited,101
- 95 E/2 Andrew and Becker,175
- 95 E/8 B.D. Taylor,177
- 95 F/10 Cadillac Exploration Limited,178
- 95 J/4/12 Giant Yellowknife Mines Limited,185
- 95 J/13 Cominco Limited,183; Giant Yellowknife
Mines Limited,185
- 95 L/3 Cominco Limited,128
- 95 L/13 Cominco Limited,186
- 95 O/4 Cominco Limited,186
- 95 O/5/6 Giant Yellowknife Mines Limited,187
- 105 H/16 Canada Tungsten Mining Corporation
Limited,237
- 105 I/6 Canex-Placer Limited,190;Dynasty Ex-
plorations Limited,190;Imperial Oil Limited,
191

- 105 I/7 Amax Exploration Incorporated,192;
Imperial Oil Limited,191
- 105 I/10 Quintana Minerals Corporation,193
- 105 I/15 Dynasty Explorations Limited,194
/16
- 105 O/8 Canada Tungsten Mining Corporation,195;
Regency Resources Limited,197
- 105 P/1/2 Trident Resources Incorporated,199
- 105 P/3 Dynasty Explorations Limited,198
- 105 P/4 Cominco Limited,198
- 105 P/6 Welcome North Mines Limited,202
- 105 P/8 Amax Exploration Incorporated,201;
Bethlehem Copper Corporation Limited,200
- 105 P/10 Geomont Exploration Company Limited,204
- 105 P/11 Geomont Exploration Company Limited,
204; Welcome North Mines Limited,202
- 105 P/14 Amax Exploration Incorporated,206,209;
Malabar Silver Mines Limited,207; Sicintine
Mines Limited,208; Vestor Explorations Limited
207
- 105 P/15 Amax Exploration Incorporated,209; Dyke
Mines Limited,210; Perry River Nickel Mines
Limited,210
- 105 P/16 Geomont Exploration Company Limited,
211;Jomial Investments Limited,212
- 106 A/3 Amax Exploration Incorporated,209;
Cominco Limited,214; Jomial Investments Limi-
ted,216
- 106 A/11 Bethlehem Copper Corporation Limited,
213
- 106 A/12 Welcome North Mines Limited,217
- 106 B/5 Serem Limited,223
- 106 B/8 Noranda Exploration Limited,220;
Serem Limited,223; Welcome North Mines
Limited,222
- 106 B/9 Serem Limited,223; Welcome North Mines
Limited,221,222
- 106 B/14 Serem Limited,223
- 106 B/15 Rio Tinto Canadian Exploration Limi-
ted,224; Serem Limited,223; Welcome North
Mines Limited,224
- 106 B/16 Rio Tinto Canadian Exploration Limited
224; Welcome North Mines Limited,224
- 106 C/16 Welcome North Mines Limited,180,225
- 106 F/1 Welcome North Mines Limited,180,225
- 117 A/8 Welcome North Mines Limited,182
- 120 B Kapvik Exploration,62
- 120 C/7/8 Great Plains Development Company of
Canada Limited,63
- 340 A Kapvik Exploration,62

INDEX

A claims	104, 142, 143, 144, 236	ARC claims	219, 223
A Fault	235	Arcadia Explorations Ltd.	136
A Zone	152, 161	Arcadia Property	103, 131, 135
AB claims	181, 182, 219, 225, 226	Arctex Engineering Services	105
Abbott River West	50	Arctic & Hudson Bay Mining District	1
Abitibi Paper Co. Ltd.	204, 211	Arctic Archipelago	28
ACHE claims	196, 197	Arctic Bay	30, 31, 32
AD claims	11, 12, 152, 153, 154, 155	Arctic Bay Fm.	31, 33
Adams Sound	31, 32	Arctic Islands Region	1, 2, 6, 28
Adams Sound Fm.	33	Arctic Platform	29, 39, 71
AE claims	127	Arctic Red River	117, 218, 223
AEF claims	203	Arden, D.E.	163
Aerial Exploration Syndicate	142	Aristofat Lake	83
AES claims	233	Arlu Kimberlites	66
AG claims	96	Arnica Fm.	186, 200, 205, 207, 208, 210, 220
AGPAN claims	45, 58, 59	Arrow Inter-America Corp.	206, 211, 214
Agricola Lake	5	ART claims	11, 12, 13, 86, 87, 152, 158, 159 203, 207, 208
AHT claims	172, 174	Arvik Mine	2
AIR claims	18	Arvik Mines Ltd.	39, 43, 45, 55
Aitch Lake (see also H Lake)	160	AS claims	110, 111
AJ claims	15, 16, 74, 219, 224	ASH claims	179
Akaitcho Ore Zone	233	Ashton, A.	113
ALF claims	207	Astec Property	41, 42
ALFA claims	203, 207	Aston Bay	66
ALL claims	43, 45, 46	Aston River	69
Allen Bay	40	Athapuscow Autocogen	79
Allen Bay Fm.	42, 44, 46, 52, 53, 60, 62, 63	Atled Exploration Ltd.	208
Allen Bay-Read Bay Carbonate Belt	40	Atlin-Yukon Mines Ltd.	161
Allen Branch	49	AU claims	110, 111
Allen Branch Graben	46	AUD claims	171, 172, 174
Allen Branch Property	46	AUX claims	104, 113, 114
Allen River	49	AXE claims	22
ALPHA claims	189, 191, 192	B claims	142, 143, 144
Amax Exploration Inc.	201, 206, 209	B-Zone Gold Deposit	18
Amayersuk Kimberlites	66	B.P. Minerals Ltd.	99, 101, 102
America Yellowknife Gold Mines	120	BAB claims	72
Amoogabooga Lake	148	BAC claims	45, 46, 49
Amundsen Basin	71, 79, 98	Back River	141, 153, 168
Anchor Lake	162	Backbone Ranges	181, 206, 218, 225
Anchor Lake Zone	161	Bacon River	49
Andrew, Mr.	176	Bacon River Anticline	46
Anglo-United Development Corp. Ltd.	120	Baffin Island	3, 28, 29, 30
ANGUS claims	11, 12	Baillie Hamilton Island	44
ANIE claims	152, 170	Baker Creek Valley	233
Anne Lake	161	Baker Lake	7, 8, 21, 22, 23, 24, 25
AP claims	104, 113	Baker Lake Area	22
APOLLO claims	45, 58, 59	Baker Lake Project	24
AQUARIUS claims	45, 58, 59	Baker Lake-Thelon River Area	7, 8, 21
Aquitaine Company of Canada Ltd.	7, 10, 26 99, 101	Bankeno Mines Ltd.	43, 47, 55, 56
		Banks Island	3

BARBARA-JEAN claims	126	BLACKJACK claims	13
Barrow Harbor	45, 53	Blanchet, P.H.	95
BAT claims	65	Blue Fiord Fm.	40, 62
Bathurst Inlet Mining Corp. Ltd.	161	BM claims	75
Bathurst Island	44, 45, 58, 59	BOB claims	11, 12, 126, 203, 216
Bathurst Island Project	58	Bonnet Plume Lake	181
Bathurst Norsemines Deposits	1	BOOT claims	12, 14
Bathurst Norsemines Ltd.	1, 102, 150, 154 161	Boot Lake	152, 161
Bathurst Norsemines Property	158, 161, 162 163	Boot Lake Zone	1, 161
Baton Lake	127, 128	Boothia Uplift (Arch)	28, 29, 39, 42, 65, 68
BATTY claims	65	Borden Peninsula	29, 31
Batty Creek	65	Borealis Exploration Ltd.	132, 133
Batty Diatremes (Kimberlite, Pipes)	65, 66 67, 68	BORNITE claims	137
Baumann Fiord Fm.	40, 62	Botha Lake Mining Corp. Ltd.	82
BAY claims	11, 12, 13, 138, 139	BOX claims	11, 12, 80
Bay Fiord	61, 63	Brady, James	136
Bay Fiord Fm.	40, 48, 53, 62, 63	BRAN claims	43, 45, 46
Bayou Petroleum Ltd.	49	Brascan Resources Ltd.	159, 160
BB claims	162, 181, 203, 210, 219, 225	BRAVO claims	189, 191, 192
BB Lake Deposit	137	Brezinski, M.B.	95
BBX claims	82, 83	Bridges, A.	17
BBX Syndicate	83	Brinsa, W.	79, 80
BC claims	78	Brislane Lake	137, 138
BEAR claims	203, 214, 215, 216	British Newfoundland Exploration Ltd.	49
Bear Rock Fm.	187, 188	Brock Inlier	71
Bear Structural Province	70, 71, 79, 88, 102 227	BRUCE claims	101, 102
Bear-Slave Operation	150, 164, 165, 166	Bruce, G.	136
BEARD claims	45, 53, 54	Bulleys Lump	64
Beaulieu River	142, 145	Bullmoose Lake	108
Beaverlodge Lake	89	Bullmoose Lake Property	104, 108
Becker, Mr.	176	Byrne, N.J., Jr.	84, 123, 143
BEE claims	152, 153, 167, 168	C claims	72
BELL claims	78	CAB claims	181, 219, 225, 226
Bellis, W.E.	118	CABIN ISLAND claims	104, 110, 111
BEN claims	76	CAC claims	189, 192, 193
Ben Lake	76	Cadillac Exploration Ltd.	179
Beneventum Mining Co. Ltd.	116	Caesar Silver Mines Ltd.	96, 97
Beneventum Syndicate	116	CAL claims	152, 153, 167, 196, 197
Bethlehem Copper Corp. Ltd.	183, 200, 209 213, 214	Cambridge Bay	29
Betty Ray Lake	85, 87	Cameron/Echo Bay Groups	98
BEV claims	77, 78	Cameron River	113, 145
Bevan, C.C.	78	Cameron River Volcanic Belt	114, 146
Bevco Mines Ltd.	78	CAMLAREN claims	117
Big Four Syndicate	105	CamIaren Mine	2, 3, 103, 104, 117, 118
Bililton BV	31, 37	CamIaren Mines Ltd.	117
BILL claims	152, 168	CAMP claims	9, 10
BINGO claims	117	Camp Lake	120, 161, 162
Bird Fiord Fm.	40	Campbell System Shear Zones	232
BIS claims	22	Camsell Bend	185
		Camsell Fm.	216, 220, 221
		Camsell River	3, 92, 96, 97, 98, 236
		Camsell River Silver District	71, 84, 92, 93

Camsell River Volcanics	92	Colomac Yellowknife Mines Ltd.	127
Camsell Thrust	184, 186	COMET claims	98
CAN claims	22	Cominco Lake	188
Canada Tungsten Mine	2	Cominco Ltd.-	1, 26, 28, 39, 41, 43, 45, 46 47, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58 59, 60, 69, 72, 73, 81, 102, 126, 143, 144 158, 161, 163, 167, 179, 180, 183, 186 198, 214, 229, 231, 234
Canada Tungsten Mining Corp. Ltd.	3, 4, 195 237, 239	CON claims	231
Canadian Index of Geoscience Data	5	Con Mine	2, 4, 227, 231, 232
Canadian Mining Services	239	Con Shear Zone	232
Canadian Nickel Co. Ltd. (CANICO)	3, 13, 106	Con-Rycon Mine	3, 231
Canadian Shield	7	CONE claims	219, 220
Canadian Superior Exploration Ltd.	28, 39 45, 49, 107	Conjuror Bay	95
Canex-Placer Ltd.	176, 188, 190, 191	Consolation Lake	109
Canex-Placer Property	188	Consolidated Discovery Mines Ltd.	112
Canoe Lake Area	135	Consolidated Manitoba Mines Ltd.	136
Canoe Lake Showing	135	Consolidated Mining and Smelting Ltd.	80, 91 143
Canol Road	195, 196, 197, 198, 199, 201, 202 204, 221	Consolidated Shunsby Mines Ltd.	75
Canon Fiord	61	Contwoyto Lake	107, 112
Cantung Mine (318 claims)	2, 227, 237, 238	Contwoyto Lake Gold Prospects	3, 112
Cape Phillips Fm.	40, 41, 44, 56, 60, 62	Conwest Exploration Co. Ltd.	95, 106, 107 160, 208, 231
Cape Phillips Shale	60	Cooke, L.	86
Cape Phillips Shale Basin	63	COOKIE claims	152, 153, 154, 155
Cape Phillips Shale Belt	40, 46	COP claims	72
Cape Storm Fm.	52, 53	Copes Bay Fm.	62, 63, 64, 65
CAR claims	11, 12	COPPER claims	83
Carr Lake	7, 10, 11, 12	Coppercap Fm.	211, 213
Casey Lake	153, 164, 165	Coppermine Group Lavas	98
CASS claims	11	COR claims	45, 55
CAT claims	15	Cordilleran Structural Province	6, 176
CB claims	78	CORINNE claims	122
CC claims	83, 140	Cornwallis Fold Belt	5, 29, 39, 44, 46, 56 59, 60, 63
CD claims	152, 153	Cornwallis Group	40, 42, 48, 59, 62, 63
Central Arctic Islands	45	Cornwallis Island	39, 40, 41, 43, 44, 48, 49 56, 60, 63
CER claims	152, 158, 159	Cornwallis Island Project	43, 49
Cerro Mining Corp. Ltd.	180	Cornwallis Lead-Zinc District	28, 39, 42, 45
Chantrey Inlet	8, 26	Coronation Geosyncline	79
Chantrey Inlet-Wager Bay Area	7, 8, 26	Coronation Gulf	71, 130, 131
CHAR claims	191, 192	Coronation Gulf-James River Area	71, 130 131, 137
Charlton Bay Fm.	82	Coronet Ore Body	229, 230, 231
CHICK claims	115	CP claims	154, 155
CHRIS claims	11, 12	Crestland Mines Ltd.	84
Christopher Island Fm.	21, 22, 25	Creswell Bay	66, 69
Churchill Structural Province	7, 70, 71	Creswell Kimberlites	66
CJ claims	104, 120	CROSS claims	126
Claims Staked, 1973 and 1974	1	Crozier Island	44
Cleaver Lake Mines Ltd.	91, 92, 138, 141	Crozier Strait	54, 57
Cliff Series Tuffs	235	Crozier Strait Anticline	56
Clinton-Colden Lake	139, 140	Cullaton Lake	18, 19
CO claims	139		
COBALT claims	235		
Colomac Dike	103, 127		
Colomac Dyke Drilling Project	126		

Curry, J.D.	129	DUCH claims	152, 153, 156
CW claims	115, 172, 174, 175	DUKE claims	104
D'Arcy Lake	163, 164	Duke Mining Ltd.	108, 113, 114, 115, 116
DA claims	203, 205	Dundas Island	44, 50, 53
DAB claims	181, 182, 219, 225, 226	Dundas Island Project	50
DAL claims	203, 207	DuPont of Canada Exploration Ltd.	165
DALE claims	137	DW claims	105
DAR claims	196, 201	DWF claims	18
DAWN claims	137	Dyke Mines Ltd.	210
Dawson Inlet	7, 15	Dynasty Explorations Ltd.	190, 194, 198
DAY claims	203, 212, 213	E Zone	3, 239
Delorme Fm.	206, 207, 209, 215, 216, 220	EAB claims	181, 219, 225
Delorme Limestone	210	EAGLE claims	77, 104, 110, 111
Delphi Resources Ltd.	109	Eagle Showing	78
DELTA claims	191, 192	East Arm of Great Slave Lake	70, 80, 82, 83
Delta North Exploration and Mining Ltd.	80	104	
Devon Island	28, 39, 45, 51	East Arm Subprovince	70, 71, 79
DeVries Lake	87	East Boundary Vein	136
Diamond	65, 68	EAST CLEAVER claims	152
DIANNE claims	85, 86	East Cleaver Lake Zone	162
Diapros	66	Echo Bay Group	92, 98, 235, 236
DIAPROS claims	65, 68, 69	Echo Bay Mine	2, 3, 84, 227, 234
Diapros Ltd.	28, 65	Echo Bay Mines Ltd.	3, 4, 234
DICK claims	203, 209	ECHO claims	191, 192
DID claims	126	ECLIPSE claims	45, 55, 56
Dircks, N.J.	211	Eclipse Property (Deposit)	45, 55, 56, 57
Disappointment Bay Fm.	40, 48, 50, 51	Ecstall Mining Ltd.	147, 148
Discovery Mine	117, 119, 121	ED claims	152, 162, 163
Discovery Mines Ltd.	3, 117, 118, 127, 128	Eids Fm.	62
Dismal Lakes	99	EKWI claims	203, 207, 208
Dismal Lakes Area	102	Ekwi River	213
Dismal Lakes Group	100	Eldorado Mine	3, 235
District of Keewatin	7	Eldorado Nuclear	90
DJ claims	15, 16	Eleanor River Fm.	40, 62, 63
Dobbin Bay	61	ELF claims	152, 158
DOG claims	11, 12	Elgin Petroleum Corp.	82
Dogbone Lake	132	ELI claims	196, 199
DOME claims	115	Ellesmere Exploration Program	62
Dome Lake	114	Ellesmere Group	64
Dome Mines Ltd.	112	Ellesmere Island	28, 60, 63
Dominion Explorers	91	Ellesmere Island-Franklin Miogeosyncline	60
DONKEY claims	172, 174	Elwin Bay Kimberlites	66
DOR claims	219, 221	ELWIN claims	65
Doucette, J.	146, 147	Elwin Kimberlites	68
Douro Fm.	52	Elwin River	66
Dragon Syndicate	73	EMILY claims	203, 204
Drill Holes, Pine Point District	172	Enex Resources Ltd.	74
DRY claims	9, 10	English, A.	30
DS claims	108	Ennadai Lake-Rankin Inlet Area	7, 8
DT claims	152, 153, 154, 155	Ensorcellement River	53
Dubawnt Group	21, 22, 23, 24, 25, 26	Epworth Fold Belt	71, 79
		EREBUS claims	45, 53

Esker Showing	107	GEORGIA claims	66, 69
Eureka Sound	61	Geoscience Forum	3
Eureka Sound Fm.	40	GI claims	126
FAB claims	104, 110, 111	GIANT claims	233
Fairchild Point	80	Giant Gold Mines Ltd.	80
Falconbridge Nickel Mines	106, 107	Giant Mine	227, 233, 234
FB claims	186	Giant Shear Zone	232
Federal Government Activities	3	Giant Yellowknife Mines Ltd.	2, 3, 4, 19, 73 112, 123, 135, 136, 185, 187, 233
Federated Mines	92	Giant-Lolor-Supercrest Properties	233
Ferric-Sanctuary-Contact Lakes Project	154	GILT claims	18
FF claims	152, 153, 154, 155	Gingrish, L.	16
FIN claims	107	Glacier Lake	179
Finger Lake	161, 162	Global Arctic Islands Ltd.	37, 38, 39
Finger Lake Zone	161	GLUG claims	203, 206
FIRE claims	22	GO claims	152, 159, 160
Fish River	182	GOD claims	104, 121
Five Star Petroleum and Mines Ltd.	16	Godlin Lakes	117, 176, 199, 200, 201, 202 203, 204, 205, 206, 207, 208, 209, 210 211, 212, 213, 214, 216, 221, 224
Flat River	117, 237, 238	Godlin Lakes District	201, 203
FLO claims	83	Godlin River	213
FN claims	128	Gold Island	122
Fort Rae	84	Goldcrest Dike	127, 128
Fort Resolution	171	Goldcrest Mines Ltd.	127
Fort Simpson Fm.	184	Golden Ram Resources Ltd.	105
Fort Wrigley	187	Goldsmith, L.B.	84
Fortune, John	120	GONE claims	78
FOX 47 claim, showing	13	GOODBYE claims	83
FOX claims	11, 12, 106	Goodwin Lake	121
FR claims	97, 98	GOOS claims	11, 12
FRAN claims	11, 12	Gordon Lake	3, 104, 116, 117, 125, 188
Francois Lake	108	Goulburn Group	79, 152
Frank Vein	114	GR claims	89, 90, 91
Franklin Miogeosyncline	29, 39, 60, 62, 63	Granite Lake	145
Franklin Mountain Fm.	225	Grays Bay	130, 136
Franklin Mountains	117, 183, 187	Great Bear Batholith	71, 79, 84, 92
Frobisher Bay	29	Great Plains Development Ltd.	60, 63, 64, 82 83, 134, 139, 141, 143, 145, 146, 168
FRY claims	186	Great Slave Basin	79
Funeral Fm.	194	Greely Fiord East	61
FXO claims	87, 88	Greenockite	215
FYRE claims	96	Griffith Island	42, 44
GAB claims	104, 110, 111	Griffith Island Project	42
GAR claims	45, 55	GRINCH claims	45, 58, 59
Garnier Bay	66	Grinnell Central Project	53
Gayna River	2, 117, 176, 217, 219, 225	Grinnell East Project	52
Gayna River District	216, 218	Grinnell Peninsula	45, 51, 53, 54, 59, 60
GEM claims	137	Grinnell West Project	59
Gemex Minerals Inc.	1, 19	Griper Bay Fm.	40
Genstar Ltd.	82	Grise Fiord	61, 63
GEO claims	180	GULL claims	30, 31, 37
Geomont Exploration Co. Ltd.	204, 211	GUN claims	194
Geophoto Services Ltd.	187		
Geophysical Results, Maguse Lake - Wallace River	9		

Gunnex Ltd.	119	Hornby Bay Group	98, 99, 100, 102
GW claims	172	Hornby Channel	77
GWT claims	174	HORNBY claims	45, 51, 52
GY claims	104, 118	HORSESHOE claims	202, 203
H claims	135, 136, 137	Howards Pass	117, 176, 188, 189, 190, 192
H Lake (see also Aitch Lake)	1	Howards Pass District	188, 189
H Lake, see Yava Deposit	2	HUB claims	9, 10
H Vein	117, 118	HUD claims	12, 14
Hackett River	2, 3, 150, 152	Hudson Bay	16
Hackett River Diapir	152	Hudson Bay Mining and Smelting Co. Ltd.	19
Hackett River Volcanic Belt	150, 154, 157	Huhill Yellowknife Mines Ltd.	122
169		HUK claims	203, 207
Hackett Syncline	161	Hume Fm.	217, 224
Hackett-Back River District	1, 137, 154	Hump Vein	117, 118
Hackett-Back River Volcanic Belt	71, 150	Humphries, W.J.	84, 125
152, 153, 157, 166		Hunter Bay	91
HAM claims	65, 88	Hurwitz Group	10, 11, 12, 16, 24, 25
Ham Kimberlites	66	Hydra Explorations Ltd.	127
Hamilton, T.	72	ICE claims	94, 203, 204
Hanson, Lawrence W.	97	Ida Point Silver Showings	227, 228
Hardisty Lake Area	88	IDJUK claims	45, 58, 59
HARMAN claims	219	IF claims	126
Harron's Development Ltd.	130	Imina Fm.	62, 64
HART claims	138	Imperial Oil Ltd.	76, 88, 99, 100, 101, 191
Hawker Creek	32, 38, 39	Index Lake	152
Hawker Creek Project	37	Indian Lake Gold Mines	127
Hawker, S.	38	Indian Mountain Lake Area	137
Hayes River	5, 26	Indin Lake	103, 127
Hayes River Project	26	Ingraham Trail	103, 111, 142
HE claims	14, 15	INK claims	12, 13
Headless Fm.	186, 194, 205, 207, 208, 214	Inland Cement Industries Ltd.	81
Headless Limestone	210	Interior Plains (Platform)	70, 71, 170, 176
Hearne Channel	83	International Nickel Co. of Canada Ltd.	107
Heath Lake	98	Inuarugligarsuk Kimberlites	66
HECLA claims	45, 51, 53	Inugpasugsuk Kimberlites	66
Helika Lake	14, 16, 17	Inuvik	29
HEN claims	12, 13	IO claims	104, 120
Heninga Lake	1, 2, 10, 12, 19	Irene Bay	63
Heninga Lake (South) Drilling Results	20	Irene Bay Fm.	40, 47, 48, 60, 63
Hepburn Metamorphic Belt	71, 79	Irwin, J.	109
Heroux, G.	14	Itchen Lake	103
High Lake Area	130, 134	ITLDO claims	96, 97
High Lake Copper Deposit	130, 135	J.C. Sproule and Associates	55, 64, 68
HILL claims	122	J.S. Redpath Ltd.	37, 56
Hirshorn	137	JA claims	15, 16, 72, 73
Home Oil Co. Ltd.	49	James River	131, 135
HONK claims	85	James River Concession	130, 135
Hope Bay	227	JAN claims	217, 219
Hope Bay Mine	2, 227	Jason Explorers	94
Hope Bay Mines Ltd.	3, 4, 227, 228	JAX claims	105
Hope Bay Mining Co.	228	Jax Lake	106
Hope Bay Syndicate	228	Jax Lake Project	105

JEAN claims	126, 172, 174, 175	Kim, B.Y.	214
JEFF claims	101, 102	Kimberlite	65, 66, 68
JET claims	22, 83	Kimberlite District, Somerset Island	65
JIM claims	17, 18, 81, 219, 222, 223	Kimberlite Project	69
JK claims	152, 159, 160	Kimik Co-op	29
JO claims	12, 104, 118	King Resources Co.	26, 38, 39
Jo Zone	161	Kinga Fm.	16
JOE claims	11, 89	Kinga Lake	11
JOHN claims	17, 18, 180	Kizan, W.W.	74, 82
John Richardson Bay	61, 63	KL claims	172, 174, 175
Johnsby Mines Ltd.	127	Kognak River	18, 19
Jomial Investments Ltd.	205, 212, 216	Korvik Kimberlite Diatreme	69
JON claims	11, 12	Korvik-Selatiavak Kimberlites	66
JOS claims	65	Kuhulu Creek Mining Co. Ltd.	37
Jos Kimberlites	66	Kuhulu Lake	30, 32
JOY claims	115, 137	L claims	137
JST claims	123	Lady Franklin Bay	61
JUD claims	65	Lake Harbour	29
Judge Daly Promontory	61, 63, 64	Lakefield Research	35
JULIET claims	43, 45, 48	Lambert Vein	115
K claims	21, 22, 23	LAMOON claims	15, 17
Kahochella Fm.	80, 82	Landry Fm.	205, 207, 208, 217, 220
Kahochella Group	83	Landry Limestone	210
KAM claims	11, 12	Lang, H.	109
Kam Fm.	232, 233	Lapis Lazuli	29, 30
Kaminak Group	9, 10, 11, 17, 19	Larkin, J.D.	138, 140
Kaminak Lake	8, 12	Laughland Lake	26
Kaminak Volcanic Belt	15	LAURINE claims	22
Kapvik Exploration Ltd.	60, 62	LB claims	97, 98
Katherine Fm.	214	LCM claims	179
Katherine Group	218, 225	LEE claims	45, 55, 86, 87
KAY claim	104, 110, 111	LEG claims	12
Kazan Falls	21	LEO claims	186
Kazan Fm.	22, 25	Little Cornwallis Island	39, 44, 55, 56, 57
Kazan River	8	63	
Kazan Sandstone	23	Little Cornwallis Island Project	55
KEE claims	196, 198	Little Dal Fm.	211, 213, 214
KEELE claims	196, 198, 199	LIZ claims	22
Keele Fm.	224	Lockhart Lake	138
Keewatin District	1	LOG claims	111
Keewatin Region	2, 6, 7, 8	LOGAN claims	12, 14
Keith Island	80	LOLOR claims	233
KEN claims	21, 22, 80, 81, 195, 196, 197	Lolor Mine	233
219, 223		Long Lac Mineral Exploration Ltd.	130, 132
Kenarctic	130, 135	133	
Kennedy Channel	61	Long Lake (see also Baton Lake)	127
Kenting Earth Sciences Ltd.	148	LOU claims	11, 12, 183, 184
KEV claims	11, 12, 203, 207	Low Lake Property	130
KIANLA claims	74	Lower Echo Bay Subgroup	235
Kilgour Gold Mines Ltd.	72	Lower Rapitan Fm.	211, 212, 213, 214
Kilohigok Basin	71, 79	LUK claims	143
KIM claims	152, 153, 156, 157	LUMP claims	63, 65

Lundquist, J.	125	Metallgesellschaft Canada Ltd.	24, 25, 31
LYN claims	58, 72, 73, 74	37, 39	
LYNN claims	45	Meunier, D.	17
Lypka, F.	97, 98	MG claims	76, 111
M-40	229	MGB claims	78
MA claims	147, 179, 180	MH claims	137
MAC claims	22, 115, 125, 182	Michalow, G.	77
MACFIE claims	137	MID claims	12
MACK claims	219, 223	Mid North Explorations	162
Mackenzie Arch	176, 224	Middle Rapitan Fm.	212
Mackenzie District	6	Midgeley, Hazel	154
Mackenzie Fold Belt	202	MIKE claims	9, 10, 11, 12, 13, 66, 69, 101
Mackenzie Mining District.	1	102	
Mackenzie Region	1, 2, 70, 71	MIL claims	45, 58
Macmillan Lake	178	Milne Inlet	38
Macmillan Pass	117, 176, 195, 196, 197, 199	Milne Island	44, 58
Macmillan Pass District	195, 196	MINE claims	238
Mactung Deposit	197	Mineral Resources International Ltd.	31, 37
MAG claims	9, 10, 12, 94, 104, 122	38	
Maguse Lake-Wallace River Project	7	Mining Corporation of Canada Ltd.	111
Maguse River	8, 10	Mining Recorders	5
Main Hinge Zone	174, 229, 230	Minto Arch	28
Malabar Silver Mines Ltd.	207, 208	MJ claims	95
Mallory Lake	24, 25	ML claims	125
Mandeville, A.	116	MM claims	129
Manetoe Fm.	185	Mollie Mac Mines	130
Mara River	152	Montgomery Lake Sediments	11
Marian River	87	MONTY claims	122
Marjorie Lake	8, 23, 25	MOP claims	106
MARY claims	45, 55, 82, 97, 98	MOS claims	103, 104, 123
MASON claims	137	Mosher Lake	122, 123, 146
MAT claims	138	Mosher, Alex	122
Mazenod Lake	87	Mount Cap Area	187
MB claims	152, 153, 154, 155	Mount Davies Gilbert	182
McAvoy	83, 137	Mount Gaudet	184, 187
McBean Property	180	Mount Kindle Fm.	181, 216, 225
McBean, R.	180	Mount Wright Mines	137
McDonald Fault System	70	Mountain Lake	18, 100, 101, 102
McDougall Sound	44	Mountain River	219, 223
McInnes Lake	75	Mulliette, R.P.	17
McInnes, F.	30	Munro Lake	14
McLeish, C.A.	95	Munro Lake Project	14
McLeod Bay	80, 83	Murry Fault	80
McLeod Bay Fm.	82	MUSKOX claims	43, 45, 46
McLeod Creek	178	Muskox Lake	141
McTavish Arm	84, 91	Myrt Lake	3, 111, 113
MEG claims	42, 45	Nahanni Fm.	183, 185, 186, 187, 194, 207
MEL claims	152, 157	208, 210, 214	
Melville Peninsula	7, 8, 29	Nahanni Region	2, 117, 176, 177
Melville Sound	3	Nahanni Sixty Syndicate	180
Mercredi, D.	163	NANCY claims	189, 193, 194
		Nanisivik Mine	2
		Nanisivik Mines Ltd.	3, 28, 30, 31, 37

Nanisivik Ore Body	35	OK claims	142, 143
Nanisivik Property	36	Oksa Bay Fm.	62
Nanorluk Kimberlites	66	OKT claims	152, 162
NAPATUK claims	29	Old Fort Island	183
NAT claims	196, 200, 201	OMF claims	137
National Topographic System (N.T.S.)	5	OP claims	131, 135
Nautilus Lake	128	Operating Mines	4
Nauiat Fm.	33	Ore Bodies, Pine Point	230
NC claims	104, 109	Ore Reserves (Table)	4
NEAL claims	94, 95	ORGAN claims	45, 58, 59
NEC claims	152, 153, 164, 165	OS claims	203, 205
Nemco Exploration Ltd.	89, 113, 116, 121	Ostensoe, L.	161
NEW claims	137	Otto, Sam	91
New Continental Oil Co. of Canada Ltd.	21	OUEST claims	65
New Jersey Zinc Ltd.	39	Ouest Kimberlites	66
New Pyramid Gold Mines Ltd.	89	P & G claims	231
Newconex Canadian Exploration Ltd.	231	P claims	135, 136
Newnorth Gold Mines Ltd.	105	Palmer Lake	117, 217
NIC claims	219, 222, 223	Pan American Ventures	130
Nickerson, D.	110, 113, 114, 145	Pan Ocean Oil Ltd.	21, 22
NITE claims	203, 211, 212, 213	Parrish Glacier Fm.	63, 64
NN claims	146	Parry Islands	28
No. 14 Vein	115	Parry Islands Fold Belt	59
Nonacho Group	70, 75, 76	PAS claims	189, 190
Nonacho Lake	76	PAT claims	42, 152, 169
NOON claims	203, 212, 213	PATCH claims	91, 92
NOP claims	45, 50, 53	Patch Lake	91
NOR claims	140	PEC claims	99, 101
Nor-Can Minerals Ltd.	77, 78	PEG claims	22
Noranda Exploration Co. Ltd.	11, 12, 15, 85 86, 140, 145, 146, 155, 156, 157, 158, 164 166, 167, 169, 170, 220	PEGGY K claims	81, 82
NORD claims	65	Pelham Bay	60
Nord Kimberlites	66	PEN claims	18
Norex Mine	92, 96, 236	Penarroya Canada Ltee.	179
Norex Resources Ltd.	94, 96, 97	Penny Strait	45
Norex Silver Deposit	96	PER claims	83, 141
Norsemines Explorations Ltd.	161	Perry River	8, 70
North Eagle Showing	78	Perry River Estuary	73
North Hinge	229, 230	Perry River Nickel Mines Ltd.	105, 210
North Nahanni River	117, 185	PETE claims	11, 12
North Sopher River	29	Peuyuk Kimberlites	66
North Star Mines Ltd.	91	Phelps Dodge Corp. of Canada Ltd.	17, 18, 72
North Vein	136	PIC claims	22
Northern Mineral Exploration Assistance	122	Pine Point	70, 71, 171
NOSE claims	104, 119	Pine Point Airstrip	230
Nose Lake	156, 157	Pine Point Barrier Complex	174
NT claims	104	Pine Point Deposits	41
N.T.S. (National Topographic System)	5	Pine Point District	170, 171, 172
O'Brien Gold Mines Ltd.	18	Pine Point Exploration	171
O'Grady Lake	194, 196, 199, 200, 201	Pine Point Fm.	175
Oakwood Petroleum	130	Pine Point Group	229
		Pine Point Mines Ltd.	2, 3, 4, 170, 171, 227 228, 229, 230, 231

Pine Point Ore Bodies (A-55, J-44, K-57, K-62, M-40, N-31, N-32, N-38A, N-42, O-28, O-42, P-29, P-31, P-32, R-61, W-17 and X-15)	229, 230	Prospecting Permit 255	47
Pioneer Island	60	Prospecting Permit 256	46
Pistol Bay	15, 16	Prospecting Permit 270	130, 135
PIT claims	125	Prospecting Permit 271	130, 135
Pitz Fm.	22, 23, 25	Prospecting Permit 273	186
Plateau Thrust	224	Prospecting Permit 274	50
Platt, J.W.	127	Prospecting Permit 275	51
PM claims	152, 153, 166	Prospecting Permit 278	59
Pogo Lake	132	Prospecting Permit 279	60
Point Lake	5, 103, 129	Prospecting Permit 280	59
POL claims	45, 55	Prospecting Permit 281	59
Polar Star Mines	130	Prospecting Permit 289	49
POLARIS claims	45, 55, 56	Prospecting Permit 290	49
Polaris Deposit 39, 41, 50, 54, 55, 56, 57 63		Prospecting Permit 291	49
Polaris Mine	56, 57	Prospecting Permit 292	49
Polaris Property	45, 55, 56, 57	Prospecting Permit 293	49
POLE claims	104, 110, 111	Prospecting Permit 294	184, 187
Police Bay	80	Prospecting Permit 295	187
Port Radium	3, 71, 92, 234	Prospecting Permit 296	148, 149
Prairie Creek	179	Prospecting Permit 297	9, 10
Prairie Creek Property	179	Prospecting Permit 298	9, 10
Pre-Racklan Deformation	213	Prospecting Permit 299	9, 10
Precambrian Mining Services Ltd.	111, 167	Prospecting Permit 300	9, 10
Precambrian Shield Resources Ltd. 112, 119, 129	3, 111	Prospecting Permit 302	11, 12
Prelude Lake	109	Prospecting Permit 304	184, 185
Presqu'ile Dolomite	229	Prospecting Permit 305	184, 185
Prince Albert Group	5	Prospecting Permit 306	184, 185
Prince Alfred Bay Fm.	52, 53	Prospecting Permit 308	9, 10
Princess Mary Lake	24	Prospecting Permit 309	9, 10
PRN claims	72, 73, 74	Prospecting Permit 310	99
Production and Development Data		Prospecting Permit 311	99
Con Mine	232	Prospecting Permit 312	99
Giant Mine	234	Prospecting Permit 313	63
Terra Mine	237	Prospecting Permit 314	63
Production Data		Prospecting Permit 315	131, 134
Cantung Mine	239	Prospecting Permit 316	99, 100
Echo Bay Mine	235	Prospecting Permit 317	24, 25
Pine Point Mines	231	Prospecting Permit 318	24, 25
Production Summary	4	Prospecting Permit 319	24, 25
Prospect Street Syndicate	113, 114	Prospecting Permit 320	24, 25
Prospecting Permit 19	55	Prospecting Permit 321	24, 25
Prospecting Permit 20	58	Prospecting Permit 322	24, 25
Prospecting Permit 53	49	Prospecting Permit 323	24, 25
Prospecting Permit 54	49	Prospecting Permit 324	24, 25
Prospecting Permit 55	46	Prospecting Permit 325	24, 25
Prospecting Permit 56	58	Prospecting Permit 326	24, 25
Prospecting Permit 88	38	Prospecting Permit 327	24, 25
Prospecting Permit 220	49	Prospecting Permit 328	153, 165
Prospecting Permit 227	53	Prospecting Permit 329	153, 165, 166
Prospecting Permit 253	56	Prospecting Permit 336	130, 131, 132
Prospecting Permit 254	58	Prospecting Permit 337	131, 133
		Prospecting Permit 338	21, 22

Prospecting Permit 339	21, 22	RIS claims	128, 219, 221, 222
Prospecting Permit 340	21, 22	Risby, C.L.	206, 211
Prospecting Permit 341	21, 22	Risby, Pete	208, 214
Prospecting Permit 342	21, 22	RISS claims	128
Prospecting Permit 343	21, 22	Riss Lake	128
Prospecting Permit 344	21, 22	RIV claims	141
Prospecting Permit 345	21, 22	Road River Fm.	181, 188, 191, 193, 194, 196 197, 198, 199, 203, 217, 225
Prospecting Permit 346	21, 22	Roberts Bay Mining Co.	3, 227
Prospecting Permits Issued, 1973 and 1974	1	Roberts Lake Property (Showing)	3, 227, 228
Prosper Mines Ltd.	126	Robertson Shaft	3, 232
Pyramid Ore Bodies	229, 230	Rocher, L.	111
Q claims	135, 136	Rochon Lake	18
Quintana Minerals Corp.	193	Rochon Lake Project	17
R claims	135	Rockinghorse Lake	147
Racklan Orogeny	211	Rocknest Fm.	148
Radiometric Till Survey	23	Rome, Bruce	83
Rae	103, 234, 236	RON claims	114
RAIN claims	203, 209	ROOK claims	43, 45, 47
Rainy Lake	94, 96	Rookery Creek	47
RAK claims	203, 209	Rookery Creek Property	47
RAM claims	106, 107, 180	Root River	117, 183, 184, 185
Ram Petroleum Ltd.	106	ROSE claims	84, 122
Rankin Inlet	3	Ross Lake	114
Rankin-Ennadai Greenstone Belt	9	Rossing, W.	145
RAP claims	203, 213, 214	ROY claims	17, 18
Rapitan Group	203, 218, 224	RT claims	90, 91, 217, 219, 224
Rasmussen, K.	89, 105, 136	RUS claims	227
RAT claims	21, 22	Russell Lake	104, 122, 123
Ray Lake	7	Rycon Mines Ltd.	231
Rayrock Mine	87	SA claims	152, 162, 163, 164
Rayrock Mines Ltd.	80, 81	SAM claims	145, 146
RB claims	137	SAN claims	138
Read Bay Fm.	40, 60, 62, 63, 65	SAND claims	9, 10, 171, 172, 174, 194
Reako Explorations Ltd.	228	Sanders, C.	118
Recluse Fm.	148	SASH claims	152, 153, 167, 168
RED claims	219, 223	Savanna Resources Ltd.	105
Redstone Arch	180, 202	Sawyer Bay	61
Redstone River Fm.	211, 213	Sayunei Range	211, 212
REEF claims	203, 209	SB claims	180
Regan Lake	153, 166, 167	Schultz Lake	24, 25
Regency Resources Ltd.	197	Scoresby Bay Fm.	63, 64
Reliance	80	Scoresby Properties	58, 59
Resident Geologist's Office	3	SDC claims	112
Resolute	28	Seaforth Mines Ltd.	89, 90, 91, 95, 122
Resolute Bay	29, 42, 43, 44, 47, 48, 49, 50 55	Sekwi Fm.	1, 3, 181, 182, 196, 198, 199, 200 201, 202, 203, 204, 216, 217, 218, 223 225, 226
Rex Lake	143, 144	Sekwi Mountain Area	211
RIBB claims	104, 110, 111, 115, 116	SELATIAVAK claims	69
Richardson Mountains	182	Selatavak Kimberlite Diatreme	66, 69
RID claims	45, 55	Selco Exploration Co. Ltd.	18
RINO claims	176	Selco Mining Corp.	15
Rio Tinto Canadian Exploration Ltd.	1, 90 91, 134, 217, 224, 225		

Selwyn Mountains	117, 176, 178, 188, 192, 193	Spit Kate Island	60
194, 197, 199, 202, 237		Sprain Lake	166
Serem Ltd.	1, 223	St. Georges Society Cliffs	31, 32
Seton Fm.	83	STAG claims	90
SH 23, 25, 26 (Showings)	38, 39	Stalagmites, pyrite	36
Shaler Group	3	STAN claims	180
Shell Canada Ltd.	23, 75	STAR claims	98, 126, 137
Shield Resources Ltd.	119	Stark Fm.	82
Shiells Peninsula	45, 50, 51, 53	STEW claims	13
Shiells Peninsula Project	51	Stewart Point	45, 53
SHOOT claims	196, 197	STORM claims	104, 109
Sicintine Mines Ltd.	208, 209	Storm Yellowknife Syndicate	109
Sidewalk Vein	103, 136	Strathcona Fiord	61
Sik Sik Golden Copper Mines Ltd.	15, 16	Strathcona Mineral Services Ltd.	37
Silver Bear Mines Ltd.	236	Strathcona Project	38
SILVER DOG claims	104, 125	Strathcona Sound	3, 28, 30, 32, 38
SINK claims	12, 13	Strathcona Sound Deposit	30, 31, 37, 38
SKI claims	9, 10	Strathcona Sound-Arctic Bay Area	31
SKIM claims	19	Strutt Lake Power Project	121
Skimming, T.	19	Stuart Bay	48
Skinboat Lakes	176	Stuart Bay Fm.	40
Slave Structural Province	70, 71, 79, 102, 103	Stuart River	40, 48
104, 131, 137, 150, 227		Stuart River Property	48
Sloan River	91	STURQ claims	11, 12, 14
Smallwood Fault	96	Sub-Cape Storm Angular Unconformity	60
Smith, D.	86	Sub-Disappointment Bay Unconformity	40, 51, 53
Smithson Creek	187, 188	57, 60	
Snake River	117	SUE claims	85, 86
Snake River Iron Deposits	216, 218	Summit Lake	188, 189
Snare Group	85, 87	Sunblood Fm.	178, 194, 206, 210
Snare River	120	SUP claims	45, 49
Snare River Mines Ltd.	120	Supercrest Mine	233
Snowbird Lake	8, 72	Surprenant, L.	14
Snowblind Bay Fm.	40	Sverdrup Basin	29
Snowdrift	79	TA claims	104, 108, 147
Snyder, C.	125	TAG claims	45, 55
SOB claims	22	TAIN claims	219, 223
Society Cliffs Fm.	29, 31, 34, 37, 38	Takijuk Lake	1, 2, 102, 148
SOLO claims	137	Takiyuak Fm.	148
Sombre Fm.	205, 207, 209, 210, 220	Taltheilei Narrows	79, 83
Somerset Island	28, 42, 65, 66, 68, 69	TAN claims	172, 174, 175, 196, 200, 201
Somerset Island Kimberlites	66	TAP claims	203, 206
SON claims	12, 14	Tarbell Mines Ltd.	120
Sonneberg, E.	163	Target Lake	74
Sorokowsky Property	180	TAT claims	79, 80
Sosan Group	80, 83	Taylor River	43
South Channel	22	Taylor, B.D.	178
South Channel Fm.	22	TC claims	171, 172
South Hinge Zone	174	Teck Corporation Ltd.	154
South Nahanni River	117, 178, 179, 193	Teck Mining Group Ltd.	17
Southern Slave Gold Area	71	TEE claims	203, 208, 209
Spencer Lake	124	Ternowski, W.	112
Spinifex Textures	26	Terra Mine	2, 84, 92, 227, 235

Terra Mining and Exploration Co. Ltd.	3, 4, 94	Turner, J.S.	115
96, 97, 108, 124, 235, 236		Turquetil Lake	12
TERROR claims	45, 53	TWIN claims	45, 55
Teshierpi Fault	99	TWIT claims	203, 214, 215, 216
TET claims	203, 213, 214	Twitya River	117, 203, 205, 206, 214
Texas Gulf Sulfur	30	Tyee Lake Resources	195
Texasgulf Inc.	1, 30, 35, 37, 135, 147, 148	UKE claims	17, 18
149		Union Oil Ltd.	185
TGOOD claims	15, 17	Unnamed claims	14, 45, 55
Thelon Fm.	22, 23, 25	UR claims	77
Thelon Project	23	Uranerz Exploration and Mining Ltd.	85, 87
Thelon River	21, 25	Uranium Point	98
Thirty-one Vein	117, 118	USUNG claims	45, 53, 54
Thubun River	77	VAN claims	227
Thumb Mountain Fm.	40, 41, 42, 44, 46, 47, 48	Van Silvers Explorations Ltd.	228
49, 50, 51, 53, 54, 56, 57, 59, 60, 62, 63		Vanguard Explorations Ltd.	114
Thumb Mountain Fm. Members	41	VAT claims	45, 55
Tibbet, J.F.	30	Vaydik, C.	109, 110, 113, 116, 121
Tibbit Lake	142	VEN claims	104, 126
TIC claims	219, 223	Vendom Fiord Fm.	62
TICKER claim	178	VENUS claims	45, 54, 55
TIL claims	219, 223	Vestor Explorations Ltd.	207
TIM claims	101, 102	VH claims	137
TIN claims	137	Victor Bay	32
TIP claims	12	Victor Bay Fm.	31, 37, 38
Titan-Polaris Mines Ltd.	195	Victoria Island	3
TK claims	172	Village Bay	60
TM claims	21, 22	VOY claims	137
TMT Project	21	W.T. Mine	2
TOE claims	11, 12	WAA claims	10, 11
TOG claims	137	WAB claims	10
TOM claims	72	WAC claims	9
Tom Deposit	195, 196	WAD claims	9
TOWER 1-149 claims	19	WAE claims	9
TR 1-332 claims	38	WAF claims	9
TR claims	32	Wager Bay	8, 26
Trident Resources Inc.	199	WAL claims	45, 55, 57
Trigg, Woollett and Associates Ltd.	38, 74, 88	Walker Lake	26
185		Wallace River	10
Truro Island	44, 50, 54, 55	WALRUS claims	43, 45, 48
Truro Island Project	54	Warburton Bay	104
TT claims	103, 104, 114, 115	Warburton Bay Area	138
TUKTO claims	45, 58, 59	Watts, Griffith and McOuat Ltd.	31, 39
Tulemalu Lake	8, 23	WAYNE claims	123
Tumpline Lake	142	Wayne Petroleums Ltd.	120
TUNDRA claims	45, 55, 56	WEA claims	9, 10, 11
Tundra Mines	105, 138	Weaver, Bruce	136
Tungsten	3, 188, 198, 238	WEB claims	9, 10, 11, 15, 45, 55
Tungsten Developers	109	WEC claims	9, 10
Tungsten-Flat River Area	117, 238	Welcome North Mines Ltd.	1, 181, 182, 183, 202
Tunraq Kimberlites	66	204, 206, 208, 209, 211, 214, 215, 217, 221	
Turnback Lake	142, 143	222, 224, 225	
Turnback Lake Area	144		

WEM claims	9, 10	WT claims	103, 111, 112
WES claims	152, 153, 155, 179	WT Property	3
West Creswell River	59	X claims	135, 136
Western River Fm.	152	XL claims	142, 143, 144
Westfield Mining Co. Ltd.	142	XLX claims	142
WET claims	9, 10	XLX North Zone	144
WEX claims	9, 10	Y claims	189, 190, 191
WEY claims	9, 10	Y CYMRO claims	104, 110, 111
Weyrowitz, C.	77	Yandle Lake	12
WEZ claims	9, 10	Yandle-Kaminak Project	11
WHALE claims	30, 37	Yava Prospect (Deposit)	5, 151, 159, 160
Wharton Lake	23	166	
White, P.S.	202	Yava Syndicate	1
Whittaker Fm.	206, 207, 209, 210, 215, 220	YAW claims	236
WHIZ-BANG claim	104, 116, 117	Yellowknife Bay	118, 231, 233
WHY claims	126	Yellowknife Bay Exploration Syndicate	123
WIA claims	10	Yellowknife Highway	103
WIB claims	10	Yellowknife Mining Syndicate	122
Wilson Bay	11, 15	Yellowknife Syndicate	143
Windflower Mining Ltd.	139, 140	Young, F.G.	182
WOLF claims	104, 124	YUK claims	99, 101
Wopmay Fault	87	Z claims	137
Worldwide Truck and Equipment Ltd.	142, 143	ZAMBESI claim	144, 145
Wrigley	117, 176, 183, 184	ZAP claims	22, 94, 95
Wrigley District	183	ZEPHYR claims	65
Wrigley Lake Area	211, 213	ZIE claims	219, 223
Wrigley Property	184, 186	ZOT claims	172, 174, 175

